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Ontario Animal Research and Services Committee Report 2001

Introduction:

The Ontario Animal Research and Services Committee (OARSC) held its annual meeting on November 1, 2001 at the Ontario Ministry of Agriculture, Food and Rural Affairs' (OMAFRA) head office in Guelph, Ontario.

The focus of this year's OARSC and twelve subcommittee meetings was to identify and prioritize service priorities. This year marks the initiation of a four-year rotation cycle, agreed upon in 2000, to focus the meetings in successive years on research, service, technology transfer and emerging issues.

In early September, subcommittee chairs and members were invited to participate in an additional meeting. Representatives from various sectors that provide service to all livestock commodities presented overviews of current services available in Ontario, emerging issues and anticipated future directions. Approximately forty persons were in attendance. This general meeting was found to be very useful and helped to identify areas of further discussion and exploration for the twelve subcommittees.

All twelve subcommittees held meetings this year and submitted reports that are included in this document. The University of Guelph Animal Program four-year review was completed in 2001 and a presentation was made by Dr. Roger Hacker at the OARSC meeting to review the ARIO agreed upon Animal Program research priorities for 2001 – 2005. An overview of the research priorities is attached at the end of this report. The main body of the OARSC report concentrates on industry scans and identified service priorities or issues. New or changed research recommendations were identified by some of the subcommittees and are included at the end of the OARSC report.

OARSC would particularly like to thank Katherine Hoffman, OMAFRA's Animal Program Research Analyst, for her dedication and leadership in assisting with the Animal Program Review in addition to her assistance provided to each of the OARSC subcommittees. The work performed in 2000 by each of the OARSC subcommittees in identifying strategic research priorities was instrumental in providing direction for the ARIO review.

Industry Scan:

In 2001, new issues came to the attention of the livestock sectors in Ontario as the extensive media coverage of the Foot and Mouth Disease outbreaks in the U.K. and E.U. brought to light the extent and ease at which infectious diseases of animal origins can spread. Ontario and the rest of Canada responded with added levels of biosecurity – at the national, provincial and farm levels, and increased attention to developing robust and co-ordinated emergency response plans. Since animal diseases are not insurable perils, the need for enhanced biosecurity at the farm level

to provide adequate protection to the farming enterprise cannot be overstressed. The events of September 11 and its aftermath further pointed out the need to provide protection against bioterrorism and enhance the security of our food supply.

In Ontario, conflicts continue over large livestock operations. In the absence of provincial legislation, municipalities are increasingly developing by-laws to restrict the size, location or land base required for new operations. The lack of consistency amongst municipalities and ongoing uncertainty has negatively impacted livestock sector expansion. A continuing challenge in the courts will ultimately decide if municipalities can enact by-laws to protect public health within their jurisdictions that are more restrictive than federal or provincial legislation. The ruling will impact on agricultural practices including pesticide use and manure application.

The renewal of the University of Guelph-OMAFRA contract is planned for 2002. Program efficiencies are required to enable the University to operate within the $50.5 M budget as well as re-invest in ministry and industry identified priorities. Livestock sectors have actively participated in discussions to examine new ways and alternatives to the conduct of animal-based research; research which by its very nature is resource and infrastructure-intensive.

Provincial and national livestock commodity groups continue to invest heavily in the development and implementation of HACCP-based on-farm food safety systems. Initial development of these programs is supported through federal CARD funding. Implementation of programs at the provincial level has received significant funding through the OMAFRA Healthy Futures for Ontario Agriculture program. In addition, the competitive Food Safety Research Program has provided funding to support several on-farm studies and the development and validation of inexpensive diagnostic tests of benefit to the livestock industries.

Prices remain strong for animals and products of animal origin, with every sector except eggs showing increased producer returns. Provincial slaughter capacity continues to decline for cattle and calves but a moderately increasing slaughter trend continues for hogs, sheep and lambs. As a percent of total Canadian livestock numbers, Ontario continues to lead in sheep and lambs (approximately 27%) and poultry (30 – 37%), ranks second to Quebec in hog (approximately 25%) and dairy production (approximately 32%), and second to Alberta in cattle on feed (approximately 16 – 18%) but ranks fourth in Canada for beef cow-calf numbers (approximately 9 %, Alberta #1 rank). Across Canada, per capita consumption of red meat continues to decline while egg, cheese, yogurt and poultry consumption continues to increase.

Common Themes:

A working definition of what constitutes a service was provided to assist in the subcommittee discussions. Typically, services can be thought of as transactions, for example, the purchase of a licence or a haircut. Most services have an associated cost borne by the purchaser of the service. In addition, the benefit of many services accrues mostly to an individual rather than to a group. Services tend to be distinct entities with a defined beginning and end result.

Throughout the discussions, it became apparent that the subcommittees found this initial definition to be too restrictive. Technology transfer and research infrastructures were deemed to be services that fall outside of the suggested definition. These service infrastructures, largely supported by OMAFRA, were deemed to be most critical to all of the livestock sectors.

While each subcommittee identified sector-specific service priorities that varied based upon factors such as producer numbers and industry maturity, several common themes emerged. In general, the larger, more established livestock sectors did not view individual service costs as a barrier to growth or expansion. In contrast, smaller and emerging industries viewed service costs as a major barrier to business growth and industry expansion. These commodity sectors continue to view a continued government role in providing or subsidizing services as critically important to their industries.

Six common service priority themes were identified by all or the majority of the subcommittees. These include:

- **Deadstock Collection:**

Increasing costs coupled with declining markets for products of deadstock collection has placed the viability of deadstock collection services in question. The future acceptability of deadstock for rendering into pet food and livestock feed seems short-lived as markets for rendered products continue to decline. A major rendering company in Ontario initiated a new list of prohibited materials not acceptable for rendering– including deadstock containing sulphamethazine residues, and deadstock and abattoir waste from cervids, lambs, goats, and zoo and fur-bearing animals.

Producers are reluctant to pay user fees to help offset costs of deadstock collection. A livestock industry Healthy Futures for Ontario Agriculture funded project will provide $2.4 M of funds, the majority of which will be directed to eligible deadstock collectors. Longer-term solutions remain to be found, particularly if on-farm disposal options become more restrictive as a result of environmental concerns.

The potential for biodiesel generation from fats separated at rendering may provide a new market opportunity, however, it is the protein portion whose use is coming under greater restriction. Increasingly, products of deadstock collection need to be regarded as wastes rather than recyclable materials. Costs to develop a centralized disposal will be large and requires the involvement of all levels of government. Deadstock collection needs to be treated as a business cost for each livestock operation and incorporated into budgets and enterprise planning.

- **Nutrient Management Planning:**

As part of the proposed *Nutrient Management Act*, livestock producers will need to develop and submit comprehensive nutrient management plans for all land-applied materials. Many municipalities have already enacted by-laws that establish similar record keeping requirements. This new regulatory framework will provide an opportunity for private sector service growth to prepare nutrient management plans. During the initial implementation phase at minimum, it is

proposed that the provincial government will continue to audit and review all nutrient management plans and provide training in plan preparation.

- **Centralized Information Management Services:**

Data collection on individual farms will continue to grow as markets increasingly demand verification of on-farm practices. On-farm food safety, nutrient management, animal identification and animal diseases are four areas where identifiable needs are emerging. Centralized information collection and analysis has already proved invaluable for performance recording, genetic improvement and food inspection purposes.

In the future, reliance on global positioning satellite (GPS) and global information systems (GIS)-enabled databases will grow. The benefits are many and varied – from designing better trucking routes, tracking farm inputs and outputs to providing spatial data needed to

identify disease trends or dissemination of chemical or microbial hazards through air, food or water.

Surveillance – the tracking and forecasting of events, hazards or health determinants through the collection of data, its integration, analysis and interpretation into surveillance products and dissemination to stakeholders – is a service that needs to grow to support on-farm initiatives in food safety, animal health and environmental protection. Linking information collected at abattoirs and processing to on-farm performance and genetic evaluation data will help to strengthen the agri-food chain and provide the quality, consistency and safety of products desired by consumers.

A variety of issues remain to be addressed including infrastructure development and maintenance costs, the expertise required to identify epidemiological trends and interpret the information provided and agreements concerning information sharing.

- **Veterinary Services:**

A shortage of large animal veterinarians has been a chronic issue in the Northern and Eastern sections of Ontario where livestock density is relatively low. A government sponsored subsidy program – the Veterinary Assistance Program (VAP) – has helped to address issues in designated under-serviced areas of the province. Increasingly, however, the ability to attract and retain large animal veterinarians is an issue faced by all regions of the province. Innovative strategies are needed to address these issues which, in many cases, are related to lifestyle choices, remuneration and unacceptable long-term working conditions.

Lack of a sufficient veterinary infrastructure could have serious ramifications on individual livestock health and welfare and Ontario's ability to provide adequate protection from serious diseases of economic or public health concern.

- **Animal Health Diagnostics:**

Continued provision of high quality and affordable animal health diagnostics is a critical component of individual herd and flock health plans and provincial surveillance for endemic and

zoonotic animal diseases. OMAFRA continues to provide $5 M/year to the Animal Health Laboratory to subsidize diagnostic laboratory submissions. However, fees charged for individual animal versus multiple submissions needed to identify a herd health issue are an identified concern.

- **Public Awareness and Communication:**

As fewer and fewer consumers have any ties to farming, the need for public awareness and communication programs continues to grow. In general, each livestock commodity organization within Ontario has and continues to develop a strong communications and marketing role. The role of government and the potential to identify more effective, cost-sharing models continue to be two active areas of discussion.

Other common services provided within the province to the livestock industries include:

- Engineering and building design
- Record keeping and accounting
- Genetic evaluation
- Water testing
- Feed testing and ration formulation
- Livestock medicines outlets

The majority of subcommittees did not identify specific issues related to these services.

University of Guelph – 2001-2005 Proposed Animal Research Program

- **Animal Research Program Mission**:

To enhance technological advancement in Ontario's animal industries by undertaking innovative research and communicating advances through modern technology transfer. Such research will support competitive and sustainable production in the context of enhancing health and well-being of animals, improving the Ontario environment, and at the same time, enhancing the quality and safety of Ontario animal products.

- **Research Program Objectives:**

  The Agricultural Research Institute of Ontario (ARIO) has accepted the following four-year research objectives. While the relative resource allocations within each species program area has been agreed upon, the total financial commitment to the Animal Program has yet to be determined.

  Beef Program Objectives

  1. Ensure product **quality** to satisfy consumer demands for high quality beef which delivers consistent and superior eating experiences for the consumer – 23%
     - Nutritional and management strategies
     - Superior genetics
     - Objective measurements
     - Quality assurance programs

2.To a ssure **food safety** throughout the beef production chain – 15%
- Reducing foodborne infectious transmissions
- Reducing antimicrobial treatments
- Procedures to detect microbial and drug contaminations

3.Im proved **animal health** from conception to harvest – 30%
- Infection and disease resistance
- Calves and immune function

4.To im prove **production efficiency** throughout the beef production chain – 18%
- Management for improved feed efficiency
- Breeding for improved lifetime efficiency
- Management for improved efficiency of cow-calf production
- Refining reproductive technologies

5.To e xamine how **intensive beef operations** affect beef production and the world we live in – 14%
- Effects on the environment
- Physical environment – health and meat quality

Dairy Program Objectives

1.Im proving dairy cow productivity through **nutrition** – 16%
- Unsaturated fatty acid enhanced milk
- Ration formulation for desired milk composition
- Transition cow
- Corn hybrids

2.Im proving dairy cow productivity through **genetics and reproduction** research with emphasis on new life science approaches – 29%
- Quantitative trait loci
- Resistance to periparturient diseases
- Cloning of elite cows
- Cryopreserved semen
- Management for breeding efficiency
- Cystic ovarian degeneration

3.Im proving the **longevity** of dairy cows – 18%
- Health strategies
- Heifer rearing and cow nutrition
- Economics and benchmarks

4.The impact of disease on cattle **health** and productivity -16%
- Udder health – dry period
- Neospora caninum and abortion
- Bovine viral diarrhea virus
- Inflammatory response – platelet function

5.To conduct research that improves dairy animal **welfare** and reduces the impact of dairying on the **environment** – 14%
- Reducing emissions
- Cryptosporidia
- Housing
- Behavior and health problems

6.**Quality** and **safety** of milk products – 7%
- Antimicrobial sensitivity
- Hygiene and bacterial count
- Management practices and drug use

Poultry Program Objectives

1.To assure superior **quality** and **safety** of poultry products – 40%
- Reduction of foodborne pathogens
- Reduce antimicrobial drug use
- Develop new and better quality products

2.To improve animal **well-being** – 10%
- Behavioral requirements for better housing
- Preventing osteoporosis
- Improve handling and transport

3.To improve poultry **production efficiency** – 40%
- Improved nutritional programs
- Understanding behavior to facilitate production
- Improve health
- Improve reproduction
- Introduction of unique genetic traits

4.To develop strategies that address **environmental** issues including those that affect poultry health, the health of poultry workers and the global environment – 10%
- Impact of poultry manure
- Reducing pathogen loads and barn gases

Pork Program Objectives

1.To develop strategies to address **environmental** issues – 20%
- Improve methods of manure handling

- Reduction of nutrient content in feed
- Reduction of odour
- Improve barn environment

2.To a ssure superior pork **quality** and **safety** – 30%
- Control foodborne pathogens
- Reduce antimicrobial drug use
- Improve flavour and tenderness
- Uniform, high quality pork

3.To im prove **production efficiency** – 40%
- Feeding technologies and programs
- Pig health
- Reproductive performance
- Introduction of unique genetic traits

4.To im prove animal **well-being** -10%
- Understanding aggressive behavior
- Investigate methods of euthanasia
- Identify factors associated with vices

Equine Program Objectives

1.**Poor performance** in horses and related wastage of adults and juvenile animals – 30%
- Prevention and repair of traumatic injuries
- Understanding lameness
- Investigate cardiovascular, respiratory and muscle function
- Investigate allergic small airway disease
- Investigate foal pneumonia

2.De velop and validate new **diagnostic treatment and prevention** avenues – 30%
- Investigate respiratory disorders, alternative ventilatory strategies and effects of air quality
- Investigate methods of anaesthesia
- Investigate heart rate variability
- Magnetic imaging resonance (MRI) and 3D ultrasound
- Novel treatments for gastrointestinal disorders
- Investigate new surgical techniques
- Study hydration status and body composition

3.Ne onatal and adolescent **wastage** through infectious disease, and developmental and production problems – 22%
- Investigate viral and bacterial infections
- Investigate parasite control
- Investigate musculoskeletal abnormalities

4.Im proving the efficiency of **reproduction** - 12%
- Study ovum and sperm physiology
- Study pregnancy establishment

5.Equine **nutrition** as it affects performance and growth – 4%
- Study growth and racing performance
- Investigate oral electrolytes

6.Em erging issues – 2%
- Study of welfare issues

Sheep Program Objectives

1.To inve stigate **health management** practices that will decrease disease, improve flock productivity and reduce the risk of zoonotic diseases – 38%
- Investigate infectious diseases
- Investigate nutritional diseases

2.Using **life sciences** technologies to achieve intensive year round lamb production and biosecurity – 25%
- Investigate in vitro embryo production
- Alternative methods for preserving genetics
- Methods to improve maternal traits

3.Inve stigate the **nutritional requirements** and environmental influences of the intensively managed flock – 25%
- Computer modeling
- Investigate interactions with pasture management

4.Inve stigate methods to improve **product quality and delivery** – 12%
- Economic performance
- Investigate microbial hazards

Aquaculture Program Objectives

1.Enha nce **environmental** compatibility – 12%
- Model approaches to quantify
- Exploit nutritional strategies
- Investigate techniques for waste management
- Investigate issues of environmental compatibility

2.Im prove animal **well-being** – 12%
- Assessment of welfare and behavior
- Investigate pathogenesis and control of diseases
- Investigate reduced antimicrobial therapy

3.Augment technological and economic **competitiveness** – 12%
- Exploit molecular strategies
- Improve gamete and embryo manipulation
- Investigate innovative feeding strategies
- Work with selected alternative species
- Develop performance measures

4.Develop **foods** for life – 9%
- Investigate quality and safety of product
- Methods to extend shelf-life
- Develop and test novel fish products

5.Refine **technology transfer** and support services – 15%
- Refine technology transfer
- Incorporate diagnostic and clinical health program

6.Expand capabilities of the Alma Aquaculture Research Station- 25%
- Enhance warm water re-circulation systems
- Develop increased private partnerships

The assistance of Jean Haws in providing administrative support throughout the year and especially in preparing the OARSC annual report is most gratefully acknowledged.

Gwen McBride
Chair, Ontario Animal Research & Services Committee

General Statistics For The Ontario Livestock Industry

The tables that follow show:

1. Average Price to the Producer – Ontario
2. Farm Cash Receipts by Province
3. Farm Cash Receipts From Farming Operations In Ontario
4. Ontario and Canada Agri-Food Trade – January to December
5. Number of Livestock Slaughtered in Commercial Establishments
6. The Size of the Ontario Livestock and Poultry Industry
7. Per Capita Consumption of Selected Foods, Canada

Detailed information on the state of the industry for each species/commodity is included in each subcommittee report.

Table 1 - Average Price To The Producer, Ontario

	1992	1994	1995	1996	1997	1998	1999	2000
Slaughter steers, $/cwt	85.65	94.24	80.64	75.88	80.93	81.08	90.92	101.16
Slaughter lambs, $/cwt	97.99	116.60	130.62	138.22	142.85	133.61	127.43	130.15
Hogs, index 100, $/100 kg	132.00	145.00	151.00	189.00	187.00	121.00	120.00	161.00
Chickens, $/kg	1.51	1.44	1.41	1.61	1.6	1.57	1.44	1.62
Turkeys, $/kg	1.60	1.66	1.67	1.85	1.81	1.78	1.71	1.72
Eggs, $/doz	1.04	1.12	1.17	1.31	1.24	1.20	1.19	1.24
Milk, $/hl	-	52.05	51.82	51.8	51.47	56.42	51.74	53.90

Source: Statistics Canada

Table 2 - Total Farm Cash Receipts by Province, ($'000)

	1999	2000
Newfoundland	77,463	72,674
Prince Edward Island	347,012	321,891
Nova Scotia	392,905	415,492
New Brunswick	373,903	364,428
Quebec	5,129,981	5,444,862
Ontario	**7,220,850**	**7,888,557**
Manitoba	2,959,104	3,133,280
Saskatchewan	5,532,680	5,818,330
Alberta	6,481,724	7,438,857
British Columbia	1,935,468	2,074,710
Canada	**30,451,090**	**32,973,081**

Source: Statistics Canada, Catalogue No. 21-603
Next update: February 2002

Table 3 - Farm Cash Receipts from Farming Operations, Ontario, 1993-2000 ($'000)

Item	1993	1994	1995	1996	1997	1998	1999	2000
Wheat	81,264	136,986	163,754	159,802	73,734	120,266	106,517	110,807
Oats	6,710	5,557	6,501	5,371	5,201	4,847	4,244	3,043
Barley	11,511	10,805	11,998	14,463	11,612	10,148	7,899	7,068
Rye	1,856	4,132	4,095	5,845	5,410	5,025	4,570	3,650
Canola	8,825	14,689	21,070	12,314	17,507	17,868	8,896	10,066
Soybeans	418,426	470,895	590,909	558,461	726,560	688,921	525,817	586,484
Corn	266,355	333,102	474,347	509,535	435,216	385,059	458,786	408,401
Potatoes	49,588	58,858	53,794	48,956	57,625	54,774	62,555	65,355
Vegetables	392,341	415,626	432,407	443,796	464,211	571,234	598,847	618,330
Apples	51,275	55,120	73,878	80,352	90,951	88,655	96,500	87,156
Other tree fruits	36,227	48,322	49,953	36,355	42,822	44,980	49,628	44,116
Strawberries	17,012	27,461	28,381	14,073	17,351	17,431	17,360	17,300
Other berries, grapes	24,956	32,536	37,775	39,458	46,114	51,569	58,985	52,943
Floriculture and nursery	393,310	418,499	445,287	469,508	505,264	577,397	664,640	826,336
Tobacco	250,836	344,925	270,402	323,630	331,873	342,307	338,960	344,873
Ginseng	50,200	47,840	47,300	51,612	39,897	36,851	22,906	24,856
Dry beans	28,363	48,949	63,723	36,057	28,640	31,399	41,942	29,631
Forage and grass seed	2,036	1,872	1,601	1,620	1,824	1,739	1,426	1,693
Hay and clover	10,375	14,735	21,520	25,407	30,314	27,478	25,315	26,173
Maple products	8,658	9,261	9,897	14,807	10,108	8,125	10,538	17,540
Forest products	16,484	18,101	19,718	20,787	20,977	19,849	21,563	19,761
Christmas trees	..	..	..	..	11,700	6,078	6,078	6,078
Miscellaneous crops	17,012	17,628	16,971	14,361	14,874	15,561	15,671	16,558
Total crops	**2,143,620**	**2,535,899**	**2,845,281**	**2,886,570**	**2,989,785**	**3,127,561**	**3,149,643**	**3,328,218**

Table 3 - Farm Cash Receipts from Farming Operations, Ontario, 1993-2000 ($'000)

Item	1993	1994	1995	1996	1997	1998	1999	2000
Cattle	862,678	822,827	760,398	781,670	781,861	850,900	907,070	979,652
Calves	111,033	114,122	86,300	71,115	87,462	80,104	87,721	96,425
Hogs	561,034	535,301	587,417	744,165	782,718	589,661	601,127	829,629
Sheep	1,900	1,705	1,983	1,870	2,190	2,590	2,391	3,680
Lambs	21,220	19,773	21,485	24,079	22,539	21,689	22,361	25,306
Dairy products	1,072,547	1,155,183	1,169,532	1,185,680	1,234,543	1,277,740	1,280,810	1,319,954
Hens and chickens	343,050	358,065	341,455	406,237	417,679	443,754	424,465	439,190
Turkeys	88,982	96,746	101,082	121,256	118,171	110,422	101,985	115,175
Hatcheries	..	..	..	..	12,459	14,212	10,564	10,530
Eggs	192,922	199,939	211,158	236,895	191,847	182,292	188,335	197,134
Wool	240	279	628	374	363	264	166	217
Honey	8,762	8,752	8,182	9,417	9,284	8,906	8,738	8,443
Furs	7,530	11,474	10,264	18,983	13,597	13,068	8,589	10,676
Miscellaneous livestock	72,386	73,590	72,991	72,379	73,873	72,280	73,291	81,127
Total livestock & products a	**3,362,625**	**3,418,527**	**3,390,719**	**3,691,311**	**3,767,464**	**3,686,280**	**3,737,876**	**4,137,513**
NISA	23,902	9,217	11,593	30,295	34,318	76,002	109,107	109,730
GRIP (revenue protection)	108,735	17,766	-199	563	-	-	-	-
Crop insurance	182,206	38,015	25,818	58,096	47,154	51,329	28,644	71,749
Price stabilization	5	5	2	-	-	-	-	-
Tripartite payments	5,213	7,728	725	14	-29	-3	-5	-4
Provincial stabilization	1,167	409	-	-	-	-	-	-
Dairy subsidy	70,029	69,107	65,258	53,742	53,284	47,364	36,487	25,934
Market Revenue Program	-	-	-	-	-	15,070	74,844	127,243
Ontario Whole Farm Relief Program	-	-	-	-	-	-	78,277	87,343
Other payments	27,976	1,162	8,210	1,122	1,860	11,279	5,977	831
Total payments	**419,233**	**143,409**	**111,407**	**143,832**	**136,587**	**201,041**	**333,331**	**422,826**
Total receipts	**5,925,478**	**6,097,835**	**6,347,407**	**6,721,713**	**6,893,836**	**7,014,882**	**7,220,850**	**7,888,557**

Table 3 - Farm Cash Receipts from Farming Operations, Ontario, 1993-2000 ($'000)

Income of Farm Operators from Farming Operations, 1993-2000 ($'000)

Item	1993	1994	1995	1996	1997	1998	1999	2000
+ Total farm cash receipts	5,925,478	6,097,835	6,347,407	6,721,713	6,893,836	7,014,882	7,220,850	7,888,557
- Operating expenses after rebates	4,793,671	5,050,713	5,186,576	5,447,192	5,583,631	5,752,547	5,927,692	6,265,353
= Net cash income	1,131,807	1,047,122	1,160,831	1,274,521	1,310,205	1,262,335	1,293,158	1,623,204
+ Income-in-kind	43,767	48,054	45,997	47,782	48,687	45,943	49,742	47,107
- Depreciation	727,494	750,179	783,309	836,782	863,182	914,298	929,854	954,088
= Realized net income	448,080	344,997	423,519	485,521	495,710	393,980	413,046	716,223
+ Value of inventory change	128,284	131,107	14,934	135,993	664	22,878	(17,132)	(245,657)
= Total net income	576,364	476,104	438,453	621,514	496,374	416,858	395,914	470,566

Table 4 - Ontario & Canada Agri-Food Trade, January-December 1998/99/00 (Cdn $' 000)

Commodity group	ex98 Ont	ex98 Can	im98 Ont	im98 Can	ex99 Ont	ex99 Can	im99 Ont	im99 Can	ex00 Ont	ex00 Can	im00 Ont	im00 Can
Live animals	426,778	1,953,771	60,357	164,042	365,564	1,537,153	75,146	234,216	407,486	1,702,394	90,377	343,073
Red meats	430,918	2,500,410	605,799	1,000,099	555,216	3,067,634	623,477	1,059,621	634,891	3,778,329	671,640	1,155,862
Fish and products	126,752	3,219,130	519,695	1,798,205	120,971	3,746,508	564,433	2,011,360	119,216	4,066,700	576,353	2,085,230
Poultry and eggs	115,091	196,288	348,880	472,742	109,101	187,147	326,588	428,282	120,818	215,234	345,418	445,226
Dairy products	123,848	416,023	184,363	316,473	116,306	364,719	209,173	352,749	82,102	281,735	268,016	450,337
Other animal products	307,448	665,126	225,686	372,245	291,823	629,060	230,420	347,536	314,555	644,814	219,028	341,383
Grains	70,158	4,352,030	177,826	390,001	111,190	3,958,598	165,735	317,284	42,774	4,298,700	213,599	374,493
Grain products	814,959	1,355,932	722,661	1,151,309	969,515	1,536,578	745,257	1,187,696	1,044,135	1,685,578	810,057	1,268,051
Oilseeds	148,245	2,480,940	152,651	240,646	134,824	1,873,179	204,686	299,825	118,302	1,705,607	207,222	294,422
Oilseed products	246,462	1,416,810	319,103	623,787	225,950	970,960	278,645	593,404	173,508	778,511	294,125	681,162
Animal feeds	362,138	806,706	428,796	634,426	333,111	749,927	433,705	624,454	316,865	777,915	450,384	653,275
Fruit and nuts	73,139	344,101	1,447,303	2,737,244	91,000	374,199	1,571,503	2,890,797	94,950	398,068	1,572,109	2,910,290
Vegetables	458,397	1,876,416	1,045,403	1,923,278	500,688	2,144,810	1,087,904	1,956,571	548,038	2,395,187	1,170,429	2,100,411
Seeds for sowing	35,876	239,327	132,517	191,067	36,855	233,395	130,996	197,028	37,538	222,709	155,750	225,031
Vegetable fibres	1,307	35,608	118,720	227,621	1,866	35,296	69,691	146,657	1,447	32,111	101,343	179,574
Floriculture & nursery products	228,674	610,351	163,167	295,707	239,029	655,707	168,242	303,595	271,470	723,510	180,859	319,700
Tropical products (excl. fruit)	389,235	567,660	960,128	1,740,059	384,766	555,663	857,046	1,509,073	418,774	586,264	803,801	1,414,814
Sugar and confectionery	439,325	705,973	621,691	1,104,797	434,957	711,855	573,674	979,324	490,912	813,216	663,944	1,039,708
Other edible preparations	363,342	634,114	699,927	1,028,849	432,354	698,753	794,445	1,134,290	421,467	701,446	842,779	1,199,921
Beverages	861,069	1,338,988	682,816	1,484,032	990,527	1,459,290	773,863	1,719,767	1,003,024	1,446,097	813,111	1,817,511
Tobacco and products	154,091	215,348	82,330	119,742	115,153	168,999	44,742	74,348	97,513	141,294	51,060	81,864
Other agri-food products	44,684	77,370	69,494	139,743	29,530	56,280	75,126	142,154	33,487	54,105	82,585	146,564
Total	**6,221,935**	**26,008,426**	**9,769,313**	**18,156,115**	**6,590,298**	**25,715,710**	**10,004,497**	**18,510,033**	**6,793,272**	**27,449,525**	**10,583,991**	**19,527,902**

Source: Statistics Canada, International Trade Division.

Table 5 - Number of Livestock Slaughtered in Commercial Establishments *a*

Canada and the Provinces, 1998 - 2000

Province	Cattle & Calves			Hogs			Sheep and Lambs		
	1998	1999	2000	1998	1999	2000	1998	1999	2000
	- '000 head -								
Nfld	2.8	2.8	2.8	6.1	6.8	6.5	3.4	3.5	3.2
PEI	35.0	28.6	28.0	195.9	204.7	195.3	1.0	0.9	0.9
NS	33.3	30.5	30.1	232.8	233.4	227.5	12.2	12.4	13.2
NB	27.6	24.5	22.0	173.6	181.9	202.7	1.9	2.0	2.1
Quebec	475.3	478.4	462.2	6,252.3	6,771.6	6,844.5	85.8	92.8	101.6
Ontario	761.5	753.6	707.0	4,011.7	4,732.5	4,803.0	225.6	251.8	265.4
Manitoba	36.3	39.7	39.4	2,307.2	2,694.2	2,969.3	10.9	16.4	12.4
Saskatchewan	357.8	331.5	292.1	1,331.7	1,308.9	1,394.0	12.4	14.7	11.4
Alberta	1,974.6	2,199.5	2,210.6	2,120.0	2,514.7	2,753.3	66.8	64.7	70.4
British Columbia	54.1	51.0	48.2	291.2	303.2	265.1	40.9	47.9	48.7
Canada	**3,758.3**	**3,940.1**	**3,842.4**	**16,922.5**	**18,951.9**	**19,661.2**	**460.9**	**507.1**	**529.3**

a **Includes federally and provincially inspected slaughterings as well as farm kill.**

Source: Statistics Canada, Catalogue No.23-603

Table 6 - The Size of the Ontario Livestock and Poultry Industry

Industry	July 1,1999	July 1,2000	July 1,2001	% change 00/99	% change 00/01	Numbers in Canada 2000	Numbers in Canada 2001	Current Rank	Current % of Canada	#1 Province in 2000
	'000 head			*%*		*'000 head*		#	%	
Bulls(>1 yr.)	26.0	26.0	25.0	0.0	-3.8	249.8	251.2	4	10.0	Alberta
Dairy cows	385.0	377.0	371.0	-2.1	-1.6	1,127.4	1,131.5	2	32.8	Quebec
Dairy heifers(>1 yr.)	182.0	174.0	176.0	-4.4	1.1	479.0	473.0	1	37.2	Ontario
Beef cows	408.0	399.0	405.0	-2.2	1.5	4,451.6	4,561.7	4	8.9	Alberta
Beef Heifers for breeding(>1 yr.)	75.0	71.0	75.0	-5.3	5.6	777.6	792.9	4	9.5	Alberta
Beef heifers for slaughter(>1 yr.)	149.0	180.0	146.0	20.8	-18.9	1,018.6	919.6	2	15.9	Alberta
Steers(>1 yr.)	285.0	290.0	285.0	1.8	-1.7	1,519.9	1,552.6	2	18.4	Alberta
Calves(<1 yr.)	610.0	565.0	602.0	-7.4	6.5	4,792.5	4,952.7	3	12.2	Alberta
Total Cattle & Claves	2,120.0	2,082.0	2,085.0	-1.8	0.1	14,416.4	14,635.2	3	14.2	Alberta
Sows & Bred Gilts	334.1	320.9	342.9	-4.0	6.9	1,282.6	1,334.7	2	25.7	Quebec
Boars, 6 months & over	14.0	12.5	13.1	-10.7	4.8	48.7	47.8	1	27.4	Ontario
Other Pigs under 20kg	1,058.6	991.9	889.5	-6.3	-10.3	3,711.6	3,692.2	2	24.1	Quebec
Other Pigs, 20-60 kg	1,008.0	1,010.5	949.1	0.2	-6.1	3,693.2	3,685.4	2	25.8	Quebec
Other Pigs, over 60 kg	966.6	953.4	907.1	-1.4	-4.9	3,564.9	3,572.1	2	25.4	Quebec
Total Pigs	3,381.3	3,289.2	3,101.7	-2.7	-5.7	12,301.0	12,332.2	2	25.2	Quebec
Sheep(> 1yr.)	139.3	156.0	158.8	12.0	1.8	519.7	550.0	1	28.9	Ontario
Lambs	114.0	129.0	122.7	13.2	-4.9	458.8	491.3	1	25.0	Ontario
Total sheep & lambs	253.3	285.0	281.5	12.5	-1.2	978.5	1041.3	1	27.0	Ontario
Layers	8,950.0	8,895.0	9,276.0	-0.6	4.3	24,901.0	25,248.0	1	36.7	Ontario

Broilers	20,924.0	21,859.0	22,802.0	4.5	4.3	72,185.0	74,988.0	1	30.3	Ontario
Turkeys	2,808.0	2,888.0	2,920.0	2.8	1.1	7,703.0	7,468.0	1	37.5	Ontario

Source: Statistics Canada

Table 7 - Per Capita Consumption of Selected Foods, Canada, 1991-2000

Red Meats, Poultry Meat and Eggs

Type	Units	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Beef:											
- Carcass weight basis	kg	33.3	32.4	31.1	31.7	31.7	31.4	31.4	31.9	32.6	31.4
- Retail weight basis	kg	24.3	23.6	22.7	23.1	23.2	22.9	22.9	23.3	23.8	23.0
Veal a	kg	1.5	1.5	1.4	1.3	1.4	1.3	1.4	1.3	1.3	1.2
Mutton and lamb a	kg	0.9	0.8	0.9	0.8	0.8	0.8	0.7	0.8	0.8	0.9
Pork:											
- Carcass weight basis	kg	25.9	28.4	27.6	28.4	27.8	25.9	25.4	27.0	28.2	28.6
- Retail weight basis	kg	19.7	21.6	21.0	21.6	21.1	19.7	19.3	20.5	21.4	21.7
Offal	kg	1.7	1.5	1.1	1.5	1.4	1.3	1.2	1.4	1.7	1.0
Total red meats a	**kg**	**63.2**	**64.5**	**62.0**	**63.7**	**63.0**	**60.7**	**60.0**	**62.3**	**64.6**	**63.1**
Stewing hen and chicken	kg	23.8	24.3	24.8	26.4	26.2	26.6	27.5	28.2	29.6	30.8
Turkey	kg	4.5	4.6	4.4	4.4	4.3	4.1	4.2	4.3	4.2	4.3
Total poultry meats b	**kg**	**28.3**	**28.8**	**29.1**	**30.8**	**30.5**	**30.7**	**31.7**	**32.5**	**33.8**	**35.0**
Eggs	dozens	15.0	14.6	14.5	14.5	14.4	15.0	15.1	15.2	15.3	15.7

a Carcass weight basis.
b Eviscerated weight. Excludes goose and duck meat.

Sources: Statistics Canada, Catalogue No. 32-229, and 32-230.

Dairy Products and Margarine

Type	Units	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Cottage cheese	kg	1.03	0.92	0.88	0.86	0.83	0.76	0.72	0.71	0.71	0.74
Creamery butter	kg	2.99	2.80	2.88	2.88	2.76	2.85	2.60	2.88	2.82	2.66
Skim milk powder	kg	1.09	1.06	1.14	1.08	0.92	1.28	1.03	1.25	1.46	1.21
Whey powder	kg	0.87	0.79	1.01	0.97	0.94	1.10	0.80	0.65	0.43	0.92
Evaporated milk	L	0.03	0.07	0.12	0.20	0.31	0.18	0.17	0.09	0.07	0.05
Cheddar cheese as such a	kg	3.12	3.08	3.02	3.18	3.24	3.06	3.17	3.15	3.27	3.22
Process cheese	kg	2.77	2.79	2.71	2.77	2.73	2.58	2.43	2.24	2.38	2.35
Other cheese as such ab	kg	5.31	5.39	5.45	5.59	5.62	5.65	6.51	6.32	6.20	6.31
Total Cheese	**kg**	**11.20**	**11.26**	**11.18**	**11.54**	**11.59**	**11.29**	**12.11**	**11.71**	**11.85**	**11.88**
Yogurt	L	2.99	2.91	3.04	3.09	3.04	3.16	3.18	3.45	4.04	4.58
Sour cream	L	0.99	0.95	1.03	1.02	0.94	0.94	0.95	1.11	1.20	1.28
Ice cream	L	10.65	10.01	10.90	11.73	11.37	10.85	10.33	10.15	9.99	8.64
Margarine	L	5.55	5.22	4.89	4.34	5.14	5.33	5.39	5.35	5.27	5.09

a Not including cheddar and other cheese used in process cheese.
b Per capita consumption of whey and skim milk cheese is included in this category.

Source: Statistics Canada, Catalogue No. 32-229, and 32-230.

Research and Service Subcommittee Reports – Service Priorities and Recommendations (2001)

Aquaculture

Aquaculture Subcommittee

Executive Summary

Ontario's aquaculture industry sits at an important crossroad in its developmental progress. The province possesses all of the important infrastructure and expertise necessary to support a significantly larger fish-farming sector than currently exists. Slow progress in addressing the conflicts and impediments inherent in the confused regulatory framework surrounding aquaculture continues to stifle growth of the industry. Uncertainty over the issue of First Nations' land claims has prevented the approval of any new cage culture sites. During the coming year, a number of new regulatory initiatives at both the federal and provincial level will begin to affect Ontario's aquaculture industry. While market demand for Ontario aquaculture products remains strong, fish farmers are increasingly frustrated by the lack of progress in resolving provincial government impediments to the growth of their industry. Creating an environment conducive to further development of the industry will require an acknowledgement by all government agencies that a successful aquaculture sector is desirable and beneficial for Ontario.

Service priorities are the primary focus of this report. These are subdivided into a number of key categories including: clinical veterinary services; public image enhancement; licensing and regulatory support; extension services; provincial research infrastructure; subsidy programs; financial sector services and dead-stock and offal disposal. No new research recommendations were identified for the coming year, although the committee endorses to continuance of all research priorities detailed in our 2000 Annual Report. These previous research recommendations are included as Appendix 1.

Mandate

The Ontario Aquaculture Research and Services Coordinating Committee (OARSCC) was established in 1985. OARSCC provides a forum for the exchange of ideas between the industry and those government agencies that administer relevant legislation, or which provide services to fish farmers. The committee also serves as one of twelve species subcommittees of the Ontario Animal Research and Services Committee, which is part of the umbrella Ontario Agricultural Services Coordinating Committee. This structure is part of a well-established system of committees that coordinate agricultural research and service priorities at the federal and provincial levels.

OARSCC strives to identify and establish priority requirements for aquaculture research and service programs in Ontario on an annual basis, with the goal of encouraging the orderly expansion of the industry. The committee also endeavours to ensure liaison and communication between those agencies and groups that have a primary interest in the long-term development of aquaculture in Ontario.

Industry Overview

Ontario's aquaculture industry continues to operate under an unofficial moratorium on significant growth resulting from a constraining regulatory environment. Total industry output has remained at approximately 4000 metric tonnes since 1999. Although some progress has been made by the joint industry-government working group on issues regarding cage culture operations, the pace has been exceedingly slow. The probable introduction of long-term leases in place of Land Use permits for cage sites will constitute a significant step forward. Unfortunately, no new sites have been approved during the past year and likely will not be approved in the near future since the Ministry of Natural Resources has taken the position that First Nations' land claims may override the Ministry's authority to govern use of public waters.

New legislation and regulations, at both the national and provincial levels, will begin to affect Ontario aquaculture producers over the next 12 months. Federally, there are changes coming under the "Introductions and Transfers" and "Livestock Medicines" acts. Additionally, a new "National Aquatic Animal Health Program" has been proposed. Provincially, the "Nutrient Management" and "Food Safety and Quality" acts will also come into effect. The extent to which these new regulatory initiatives impact fish farmers is uncertain and will only become fully apparent as they are implemented. The likely result will be a more constrained, rather than enabling, environment in which to conduct business in aquaculture.

Canada's federal Department of Fisheries and Oceans has continued to move forward in recognizing aquaculture as a significant 'national' industry. A federally sponsored collaborative industry-government research and development program (Aquaculture Collaborative Research & Development Program – ACRDP) was started this year, with some funding available for the Central and Arctic regions.

Demand for Ontario aquaculture products remains strong, and future market opportunities are growth-oriented, rather than stable state in nature, and industry participants are increasingly frustrated by the provincial government's repression of fish farming. Aquaculture is a form of primary production that has the potential to contribute much more to Ontario's economy than currently exists ($50–60 million in 2000, Aquastats 2000, University of Guelph). If the industry is not permitted to grow, the "multiplier" benefits from this primary production will not be realized and consumer dollars will increasingly be spent on imported fish products. The experience and expertise that has developed in Ontario's aquaculture sector over the past thirty years will not be retained if potential new entrants, as well as existing farmers, do not see reasonable access to these expanding opportunities. Ontario possesses the natural resources, experience, expertise, infrastructure and market opportunities to sustain a significantly larger aquaculture industry than currently exists. The missing component is a more enabling and stable legislative and regulatory environment in which to do business.

Service Priorities

1) Clinical Veterinary Services

The University of Guelph's extension veterinary services have been essential to the development of Ontario's aquaculture industry. Fish health management is less advanced, and arguably more demanding, than conventional livestock health care. As genetic and nutritional advances speed fish growth, access to immediate and reliable veterinary help will become increasingly important. The laboratory infrastructure and advanced expertise at the University will remain essential, even if full-time private sector veterinary services for fish health become available in Ontario. The maintenance and enhancement of the clinical veterinary services offered at the University of Guelph are critical to the ongoing development of our aquaculture sector.

2) Image Enhancement

Image enhancement presents a particularly significant opportunity for Ontario aquaculture, since the public is becoming increasingly aware of the health benefits of omega-3 fatty acids and the potential contaminant problems in seafoods obtained through the traditional capture fisheries.

Advertising agencies are used by major commodity groups to build favourable images for their products in the public eye. This type of promotion may be the only way producers can counter the negative campaigns many environmental organizations are conducting against commercial agriculture and livestock production. Smaller commodity groups like aquaculture, do not have the financial resources to develop effective generic promotional advertising. To support the development of newer agricultural industries, assistance in public image enhancement should be recognized as a priority for the public sector agencies.

3) Licensing

The present system of licensing aquaculture operations in Ontario constitutes a challenging barrier and constraint to the development of the industry as a whole, as well as to individual producers. Licenses are issued by the Ministry of Natural Resources for periods of one to five years and may be conditional upon a variety of factors. Examples are production quotas, water testing requirements, and species limitations. While the rationale behind such conditions is sound, the application practices are inconsistent and frequently unjustifiable from a cost/benefit point of view. For instance, water-testing requirements may be imposed that cost many thousands of dollars annually but yield little or no useful data for safeguarding the environment. For cage operations, the process involved in obtaining a new licence has become unreasonable; the application procedure can take years to complete and demands a large financial commitment with no assurance that the rules governing approval won't change arbitrarily.

New licences for inland aquaculture facilities normally require the proponent to obtain a "Certificate of Approval" and a "Permit to Take Water" from the Ministry of the Environment. During 1998, a new fee schedule was introduced for the Certificate of Approval application process. Previously, fees were charged according to the capital cost of the subject works, and ranged between a minimum of $50 to a maximum of $100,000. That system allowed for the obvious difference involved in reviewing an application from a farm or small business pertaining to a proposed water treatment facility that might consist simply of an earthen settling pond with construction costs of just hundreds or perhaps a few thousand dollars, as opposed to reviewing an application from a major manufacturing facility that might involve sophisticated treatment processes to lower toxic contaminant levels in effluents and cost millions of dollars. The new fee schedule does not distinguish between these situations. The application fee is a minimum $6,200 to a maximum of $33,200 and depending on circumstances, the maximum could conceivably be applied to the earthen settling pond while the multimillion-dollar industrial process wastewater treatment plant could pay the minimum. This can be prohibitive to the farm or small business, while inconsequential to the major manufacturer.

4) Extension Services

The Ontario Ministry of Agriculture, Food and Rural Affairs provision of an additional aquaculture specialist to the province's expertise pool, has significantly strengthened the industry's ability to cope with problems and obstacles arising from our regulatory framework. In addition, the University of Guelph's Aquaculture Centre has done an exemplary job of facilitating the transfer of knowledge from research results and technical information to the industry. In the near future, new legislation and regulations under the "Livestock Medicines Act", the "Food Safety and Quality Act, 2001", and the "Nutrient Management Act" will fully tax all extension resources available to the aquaculture industry. To realize the effective implementation of these new rules and policies, existing extension resources must be retained and enhanced in order to cope with the rising demand for information transfer.

5) Provincial Research Infrastructure

The existence of the Alma Aquaculture Research Station has facilitated the development of a provincial research infrastructure that is responsive to the needs of Ontario's aquaculture industry. Alma is open to both proprietary and non-proprietary projects funded by the private sector, constituting a genuine service delivery to the industry. The atmosphere fostered through such close collaboration with producers carries-over to aid the focus of related research at the main campus of the University of Guelph. Consequently, our provincial research infrastructure and Alma's role therein, provides a real and important competitive advantage for Ontario aquaculture. This service function needs to be maintained in order for Ontario to stay competitive in the rapidly changing, technology-driven industry that is modern day aquaculture.

6) Subsidy Programs

Fish farmers face many of the same financial problems and hazards that conventional livestock producers do, but frequently are not eligible for "safety net" or other support programs, either through simple oversight or through a lack of flexibility in program structure that could often easily accommodate "non-conventional" producers. Additionally, conventional 'terrestrial' livestock operations are frequently subsidized for expenses incurred for environmentally driven requirements, while such expenses normally comprise an ongoing cost for aquaculturists. These expenses can be expected to increase substantially as compliance measures for the "Nutrient Management Act" are introduced. If programs to alleviate the cost of compliance are not extended to fish farms, the growing burden associated with environmental compliance requirements may pose a substantial threat to the economic viability of the industry.

7) Financial Services

Access to debt financing and operating capital is available to Ontario aquaculture producers through the same channels and providers that conventional livestock operations use. Loan guarantee programs, when available, facilitate access to financing, especially for beginning farmers. While the situation within the province is reasonably equitable, Ontario producers have historically been, and continue to be, significantly disadvantaged relative to east coast maritime producers who benefit from comparatively generous financing assistance programs designed to stimulate regional economic development. In particular, public and private sector groups interested in promoting aquaculture development in Northern Ontario must be prepared to address the competitive threats arising from these circumstances.

8) Dead-Stock And Offal Disposal

Removal services are as necessary for the aquaculture industry as they are for other animal industries. The province may be required to support this service if private sector operators withdraw or curtail their businesses for economic reasons.

Main Issues

1.Pr ofitability

Production of food grade fish on a commercial scale must demonstrate improved and sustainable profitability if aquaculture hopes to become a significant industry in Ontario. Although a number of fish farms enjoy financial success by addressing specific market niches, such as live fish sales for various purposes, the history of larger-scale production has not been encouraging. The fundamental reason behind this problem is the fact that wholesale prices for rainbow trout at the farm level have not moved much for two decades, while input costs have risen substantially. Other farm sectors have also faced the same problem, but have had greater success in bringing down costs of production. Aquaculture is also gaining significant additional costs through added regulatory burdens.

Much of the ongoing research and service activity at the University of Guelph relates to the issue of profitability, particularly in the areas of health management, nutrition and bio-energetics, and genetics, breeding, and reproductive control. This work must continue, with an intensified focus on projects having the most potential to directly lower the unit cost of production.

Increasingly, profitability is being negatively affected by the interplay between environmental issues and the constraining regulatory framework surrounding aquaculture in this province.

2.Re gulatory Framework

Aquaculture does not readily fit into Ontario's existing legislative or regulatory framework. At present, neither the Ontario Environment nor Natural Resources Ministries have been prepared to acknowledge that the growing of fish for human consumption is essentially an agricultural activity. Until that recognition is achieved, it is doubtful that any coherent provincial policy governing fish farming can emerge. In the meantime, aquaculture development is burdened or thwarted by uncertainty and uneven application of regulations, as well as the application of regulations written for other activities. The cost in time, effort, and direct financial outlay to the industry from this situation has had a considerable negative impact on profitability.

The Ontario Ministry of Agriculture, Food and Rural Affairs needs to continue its strong advocacy of aquaculture and promote acceptance of fish farming as an agricultural activity.

Examples of two key regulatory points that give rise to numerous related problems are the categorization of fish manure as an industrial, rather than agricultural, waste product and the failure to accept domestically raised fish as private rather than public property.

3.En vironmental Issues

Public scrutiny of all aspects of water use is increasing, concurrent with continued vocal criticism of aquaculture by environmental organizations across the country. Regulatory agencies require data on the industry's environmental footprint within Ontario to counter the impact claims of aquaculture opponents. Although controversial regulatory issues are often decided politically rather than rationally, sound scientific evidence favourable to an industry's position is essential in today's public environmental arena. As an industry, aquaculture in Ontario has neither the size nor the profitability to contend with its opposition on its own.

Work aimed at developing site assimilative capacity models is presently underway at the University of Guelph and by a multi-agency/stakeholder committee led by the Ministry of the Environment.

For the cage sector, much of the concern surrounding perceived and actual environmental impact could be alleviated if investigation of decommissioned or fallowed sites indicated that these areas returned to a "natural state" relatively quickly. Regulation based on a mass nutrient loading approach combined with information on regenerative periods would also allow the cage sector of the industry to work towards an operational model involving site rotation, analogous to the practice of field rotation in land-based agriculture. For inland sites, regulation based on annual nutrient loading from a facility and the assimilative capacity of the watershed would permit evaluation of the impact of a particular fish farm relative to other nutrient sources. Mitigation, if required, could then target the source providing maximum benefit for minimum cost.

4.Com petitiveness

Ontario fish farmers must compete with food products coming from traditional capture fisheries, from other aquaculture industries, especially those of Canada's east coast, and perhaps most importantly, from other red or white meat industries such as beef and poultry. Key to this issue is the need to continually strive to lower production costs and to market products that readily gain consumer acceptance.

In addition to previously noted research at the University of Guelph intended to lower production costs, work has also started on extending the shelf life of fresh fish fillets.

Fresh rainbow trout, primarily in filleted form, constitutes Ontario's main aquaculture product. To effectively compete with other red and white meats, diversification and refinement of product forms is desirable. With regard to lowering production costs, the most potential gain would come from development of less expensive feeds.

5.Pub lic Perception

In spite of the vocal criticism of aquaculture by environmental activists, there remains a strong perception that aquaculture is an industry of the future. While this perception is largely based on the sad realization that the law of the commons will inevitably lead to the end of the global capture fisheries, it is nonetheless a strong positive force for the industry and should be emphasized with respect to the future potential of fish farming in Ontario. Additional opportunities to win support for the industry stem from increasing public awareness of the health benefits of fish consumption, which are significant. Since Ontario fish farmers lack the resources to directly counter the negative media campaigns of large non-governmental organizations opposed to aquaculture, efforts should be made to gain public support through communicating beneficial aspects of the industry which are generally accepted and difficult to dispute.

The University of Guelph/OMAFRA Aquaculture Centre currently handles much of the public and media advocacy for the industry. The Ontario Aquaculture Association lacks the size and resources to be effective in that role.

Public perception will play a significant role in determining the future of Ontario fish farming. The Aquaculture Centre has the capability to take a more active role in public media advocacy for the industry and should extend its activities in that direction.

Conclusion

Significant future expansion of the aquaculture industry in Ontario can still occur. although the window of opportunity for the aquafarming sector will not stay open indefinitely. Ontario possesses ALL of the infrastructure requirements to enable this expansion and follow the global trends in aquaculture growth which have averaged 11% per annum increases on average over the last decade. Unlike many other meat commodity industries which predict, at best, only steady-state demands for their production, there are a plethora of credible reasons why aquaculture can, and will, expand dramatically over the next few decades. Both land-based and near-shore cage culture operations in Ontario are viable, however, Ontario's regulatory and economic climate will continue to be the largest factors influencing the growth of aquaculture here.

Notwithstanding these constraints, it is of the opinion of many experts that aquaculture has a dramatic potential for growth over the next 2 decades. The province must seize the opportunity to expand, diversify and stabilize its agricultural sector through the production of aquatic food products.

Beef

Beef Subcommittee

Executive Summary

Beef Services Priorities

The Beef Subcommittee 2001 Annual Meeting was held at the OCA boardroom on Oct 11, 2001. The mandate of the committee and the changes to the priority setting process were reviewed.

We are now on a four year cycle with the following major topics by year:

Research	2000
Services	2001
Extension	2002
Emerging Issues	2003

This will allow more fulsome discussion of non-research priorities and will coincide with the University of Guelph research program planning cycle

Mike reviewed information presented at the meeting hosted by OMAFRA on September 6th to introduce new service ideas.

The group reviewed issues identified at September 2000 meeting and selected those that had a direct service component.

Mike read letters from Dr. Ken Bridge and Phil McEwen who could not attend.

Further service issues were identified

Like issues were grouped by consensus into various categories

The categories were assigned to a priority class (A, B or C) by consensus, based on 3 criteria:

Overall importance to the industry
Are current needs being met for this priority ?
What are the anticipated future needs in this area ?

With this ranking system, issue categories being rated of highest priority (rank = A) would be those which are not currently being satisfied and which are considered to be of major importance, or projected to be of major importance. A lower ranking (rank = B or C) implies either a lower overall importance to the industry or that these needs are considered to be adequately satisfied at the current time.

To assist in defining which priorities fit into the "A" classification, the committee was asked to consider the question:

Following ranking, the group identified "Champions" for each group of "A" priorities and some others. The Champions are the entities which would be expected to provide the leadership to ensure that the service needs are met; they may or may not provide the services directly.

Service Priorities

Beef Subcommittee Service and Recommendations

PRIORITY	SERVICE AREA	CHAMPIONS	COMMENTS
A	Environmental Management Deadstock EFP NMP (development, assessment assessment of GMO's climate change	 private sector (OMAFRA)	water quality is key solution needed for deadstock NMP - completing - review training (developers, producers) no body in place
A	Information Transfer Production consultation / info call centre info management on farm data data on industry use of biotech products research results consultants transportation/ animal welfare market info listing service (eg. Calves	 OMAFRA Ag Division Innov Risk Man Div Ontario Cattlemen's Association/ Canadian Cattlemen's Association	trouble getting to end users low rate of uptake animal welfare concerns
A	Research priority setting infrastructure benefits/ pays consumer driven	 OARC University of Guelph OMAFRA	clear goals needed for U of G contract evaluation criteria (U of G, OMAFRA) infrastructure is key

PRIORITY	SERVICE AREA	CHAMPIONS	COMMENTS
A	Risk Management national ID farm database FAD out (national) Ontario emergency plan Biosecurity on-farm food safety (animal records of health, meat inspection, training, audit, recording - data)	Canadian Cattle ID Agency OMAFRA OCA	national ID – compliance database of farms on-farm food safety (across commodity)
B	Communications political lobbying consumer education consumer preferences	OCA	never enough societal acceptance of agriculture
B	Development & Approval genetic testing regulations (products) assessment of : biotechnologies pharmaceuticals supply of product	Canadian Animal Health Institute /CCA Federal Gov	slow and costly approval process for pharmaceuticals
B	Health Services vet availability biosecurity (risk) prevaccination/ preconditioning livestock med course (risk?)	OMAFRA	concern re: availability of vets role of vets vs. technicians better biosecurity needed more adoption of preconditioning

PRIORITY	SERVICE AREA	CHAMPIONS	COMMENTS
C	Financial risk management marketing options liability (certification, product destroyed) financing COP hard analysis	OMAFRA	liability for product/ environment, etc COP data needed
C	Lab Analysis Pathogens mould mycotoxins feed antimicrobial drug residue water GMO's Manure soil air (odor, GHG) vet diagnostics		good facilities need to develop/ improve tests
C	Market Development Grading audits labeling export markets	Owner of brand	nutritional labeling audit of brands

Attending:

Larry Chanda, OCA
Sandy Sorbara, OCFA
Ralph Macartney, OMAFRA
Nigel Henriques, BIO
Mike McMorris, OCA
Ira Mandell, UG
Dan Ganesh, Ont Agribusiness Assoc.
Barb Kalow, AAFC
Dr. Scott McEwen, OVC
Tom Hamilton, OMAFRA
Katherine Hoffman, OMAFRA
Don Blakely, OMAFRA

Absent:

Ken Bridge, OABP (written submission)
Richard Heleniak, Ont,. Ind. Meat Processors
Dr. Rob Tremblay, CAHI
Rick Dejonge, Better Beef
Andi Owen, OVA
Phil McEwen, UG (written submission)
Christoph Wand, OMAFRA

Dairy

Dairy Subcommittee

Executive Summary

The Ontario Dairy Research and Services Committee (ORDSC) met on Sept 6/01 to identify "services" recommendations for the Ontario dairy industry and update the "research" recommendations submitted to the Ontario Animal Research and Services Committee (OARSC) in 2000.

The dairy industry in Ontario is in very good shape, overall, due in large part to the stability provided by the supply management system. As a result the services already provided are for the most part adequate and affordable. Seven service recommendations identified were: record keeping, quality assurance programs, professional services, engineering services, accounting services, veterinary services and nutrient management advisors. In most cases these recommendations are intended to assist new and smaller producers less able to afford existing commercial sources.

The ARIO review of the proposed 2001-2005 dairy research program expressed concern that environmental issues did not receive necessary emphasis. ODRSC recommends additional "environmental" research in the following priority: pathogens, nutrients, odours, milk house wastes and manure management.

Three members of the committee will be replaced in 2002 and Hans Vink (DFO) and Brian Lang (OMAFRA) appointed as Co-Chairs

In 2000, OARSC implemented a four year cycle, concentrating on different issues in each year. This year the issue was "Services". A service is defined as something transactional in nature, usually with an associated fee. The members of the ODRSC met with the OARSC on the morning of Sept. 6/ 01 to hear an overview of services currently available to the Ontario Livestock and Poultry industries. Topics included feed testing, animal health diagnostics, deadstock collection, veterinary services, nutrient management plans and performance recording. The afternoon was spent identifying service priorities and updating research priorities identified in 2000.

The Ontario Dairy Research and Services Committee (ODRSC) is scheduled to replace the current chair and 2 industry members in 2001. In 2002 there are 7 members from research and industry to be replaced. The committee appreciates the contributions that have been made by departing members Leo Brisson and Heather Hunt. Hans Vink (DFO) and Brian Lang (OMAFRA) have just recently agreed to take on the position of Co- Chairs of the committee.

State of the Dairy Industry

Overview

- Gordon Coukell was elected as Chair of Dairy Farmers of Ontario, and Bruce Saunders as Vice-Chair, in January following the DFO Annual Meeting. After 20 years as a Board Member and 11 years as Chair of Dairy Farmers of Ontario, John Core did not seek re-election to the DFO Board. John provided outstanding leadership to the dairy industry in both Ontario and Canada during his 20 years of service. At the time of his departure, he was also President of Dairy Farmers of Canada. John was deservedly recognized on several occasions early in the year for the tremendous contribution and commitment he made to our industry over the last two decades.

- Trade issues continued to require ongoing attention over the past year. The single biggest issue has again been the follow-up to a WTO challenge by the United States and New Zealand on the method of handling export milk. The WTO Dispute Settlement Body upheld the initial WTO Panel which ruled that Canada was in violation of its export subsidy commitments. The industry has spent a considerable amount of time and effort in dealing with the results of this decision.

- Environmental issues continued in the forefront in 2001 as a result of the E. coli outbreak in Walkerton last year. DFO worked with its partner organizations in the Ontario Farm Environmental Coalition in addressing issues related to the Walkerton Inquiry. The introduction of the Nutrient Management Act (Bill 81) in the Legislature in June also meant that attention needed to devoted to its progress through the legislative process.

- As a result of the Foot and Mouth Disease (FMD) outbreak in the U.K. in March, DFO worked with other livestock organizations and governments to help minimize the risk of FMD being introduced into Canada. The end result has been that increased biosecurity measures have now been implemented on dairy farms throughout the province.

- Weather conditions throughout most of Ontario in the summer and early fall of 2001 have been extremely dry, a reversal to the wet and cool summer of a year earlier. This has meant that the quality of many of the crops harvested by dairy farmers is quite variable across the province. Fall and winter milk production levels may suffer as a result of the expected poor feed quality.

- Total milk production in Ontario was almost identical during the dairy year ending July 31, 2001, to the previous year. Actual production was 2.494 billion litres, down just 0.2 %.

Herd and Farm Profile

- In July 2001, 6,216 milk producers sold milk to DFO compared to 6,395 a year earlier. There were also 119 cream producers in July 2001 compared to 129 a year earlier.

- Ontario DHI statistics show average performance of published records is now 8,804 kgs of milk, 331 kgs of butterfat and 286 kgs of protein. Slightly more than two-thirds of the dairy herds in the province are on some form of milk recording.

- New dairy barn construction continues in Ontario, with new facilities being predominantly free-stall barns with bunk silos and, in some cases, commodity sheds. An increasing number of these new facilities feature sand-bedded free-stalls. An emerging technology that is being adopted in several of these new facilities is the Automated Milking System (AMS) or the "robotic milker".

Milk Marketing Conditions

- Ontario is using an Export Contract Exchange, operated by a third party administrator, as its method of providing export opportunities that are beyond Canada's WTO commitments for subsidized exports. In early July, a WTO compliance panel ruled against the method being used in Canada to handle milk for export. Canada immediately announced that it would appeal the panel's decision. This process is now underway with hearings scheduled for Geneva in late October. A decision on the appeal is expected to be announced in early January.

- Domestic sales of milk and dairy products have experienced some slowdown in growth over the past year. Fluid sales in particular have been just holding their own, while there continues to be growth on the industrial side, especially the cheese category.

- Producer quotas were reduced by 0.83% on August 1 to account for quota that had previously been added to build stocks of butter and cheese. This adjustment was required to bring producer quotas in line with the provincial market share quota allotted to Ontario.

- Average provincial component tests increased slightly for the dairy year ending July 31, 2001. Butterfat average for the year was at 3.92 kg/hl compared to 3.91 kg/hl a year earlier, while protein increased to 3.33 kg/hl compared to 3.30 kg/hl the previous year.

- Component prices for within-quota shipments during July 2001 were as follows: (July 2000 figures in brackets) Butterfat $5.78\kg ($5.66); Protein $9.30\kg ($8.82); Other solids $1.30 ($1.24). The average gross return for milk marketed within quota during July 2001, including the federal subsidy of $0.47 when considered over all milk, was $59.63 per hectolitre.

- Quota prices in Ontario have been variable in recent months with a low for 2001 in June at $17,997/kg to a high for the year at $20,000/kg in August (results up to the September exchange, at time of writing).

Canadian Dairy Products Reasonably Priced

- Price comparisons between the U.S. and Canada continue to show that, overall, Canadians are paying lower prices for a "basket" of dairy products. The most recent semi-annual survey conducted by Dairy Farmers of Canada, based on Agriculture Canada survey methods in the summer of 2001, showed that on average, Canadians pay about 20 per cent less for their dairy products than Americans do.

National Dairy Quality Assurance

- Ontario is in the process of piloting a national dairy quality assurance program, based on HACCP principles. The program has been in the developmental stages for some five years under the direction of Dairy Farmers of Canada. It will involve two main levels of control. These are critical control points and standard operating procedures. The general roll-out of the program will take place after experience has been gained through a pilot program. The objective is to market high quality milk at all times and, in doing so support a national action plan to make Canada a world leader in food safety, innovation and environmental protection.

Government Relations

- Dairy Farmers of Ontario has continued with the increased focus on government relations activities that was initiated two years ago in an effort to develop strong, united and co-ordinated support for our marketing system at both the provincial and federal level. The services of a government relations firm are being used to assist in this endeavour.

- Many of our Dairy Producer Committees are involved in the political process at the county level. They meet with local MPPs and MPs and keep them abreast of issues from a constituency perspective.

Dairy Farmers of Ontario's Research Support

- Dairy Farmers of Ontario continues to support agriculture and agri-food related research based upon a research check-off on all domestic milk marketed. Over the past year DFO supported more than $1 million in various research projects and activities. Most of this funding supports work at the University of Guelph with some funding also going to Agriculture and Agri-Food Canada Research Stations.

- DFO has also played an active role in the Ontario Agricultural Research Coalition (OARC) in recent months, particularly in the consultation process regarding the next OMAFRA/University of Guelph five-year agreement.

Dairy Service Priorities and Recommendations

Current services provided by OMAFRA, University of Guelph, private industry and consultants to the Ontario dairy industry were discussed. Many of the services previously provided by OMAFRA have been privatized and the ministry provides few actual services. Exceptions include such thing as the Livestock Medicine Outlets, dairy plant inspections and factsheet/ publications service. The University of Guelph and associated Colleges provide a variety of services such as Grower Pesticide Certification, Livestock Medicine Certification, Veterinary and Laboratory Services and Pesticide Diagnostics: Agri-Food Labs and other private labs provide feed testing services. Veterinary services are provided by private veterinarians although there may be a shortage of large animal practitioners in the north. Veterinarians often provide other services, such as nutritional consultation, as well. Ontario Dairy Herd Improvement Corporation provides performance recording and a large variety of other related management services. Artificial insemination (A.I.) units provide A.I. and other services. Dairy Farmers of Ontario (DFO) provide the obvious member services of milk collection and marketing and have also assumed the responsibility for farm inspections. A milk quality and milking equipment service is also available. The feed industry provides a range of nutritional services and there are a growing number of nutritional and business consultants serving the dairy industry.

As indicated in the "State of the Industry" report, the Ontario dairy industry is in very good shape, forward thinking and adopting new technology to keep it competitive in the foreseeable future. A component of this success is due to the supply management and orderly marketing system that has provided stability in the past and confidence to plan for the future. As a result there are not many additional services needed by the Ontario dairy industry. Services provided are adequate for the most part and affordable. The financial support to keep some service costs affordable such as veterinary laboratory post mortems, is necessary to assure herd health and food safety. This is especially true for other food producing animals.

There are some additional services recommended by the ODRSC. These are services that may not currently be viable commercially.

1.Re cord keeping.

Partly in response to the regulations pending on nutrient management plans, there is a need for record keeping services that ensure the needed accountability, are auditable and preferably reviewed by a 3rd party. **(Champion – OMAFRA)**

2.Qu ality assurance programs.

DFO is in the process of enhancing its internal quality assurance program, but as with nutrient management plans, a 3rd party and audit process would ensure public confidence. **(Champion – OMAFRA)**

3. Professional services

Although excellent professional services are provided through private industry and consultants, there is a perception of bias. This type of service should also be provided by OMAFRA and/ or University of Guelph on a fee for service basis. (OMAFRA and U of Guelph)

4. **Engineering services**
   The dairy industry continues to see construction of new facilities. There is a shortage of engineering services in the agricultural area. It is recommended that OMAFRA/ University of Guelph consider providing some of these services until such time as the private industry is in a position to offer these services across the province. (OMAFRA and U of Guelph)

5. **Accounting services**
   Similar to engineering services, there is still a need for government support of agricultural accounting services, especially to smaller producers and those agricultural sectors less able to afford commercial sources. **(Champion – OMAFRA)**

6. **Veterinary services**
   As mentioned earlier, there is a shortage of large animal veterinarians in the fringe areas and a growing shortage anticipated in future. This has herd health and food safety implications. Some type of support should be made available so this service is equally available to producers across the province. **(Champion – OMAFRA)**

7. **Nutrient management advisors**
   Although there are, and will be more, nutrient management plan consultants certified, these services may not be affordable by all dairy producers or those in other agricultural sectors. The point was also raised whether agricultural producers should pay for something that is society driven. The recommendation is that OMAFRA be prepared to offer these services on a subsidized basis for 4-5 years until the industry has made the necessary adjustments. **(Champion – OMAFRA)**

Deer and Elk

Deer and Elk Subcommittee

Executive Summary

The current report focuses on the service recommendations made by the Deer and Elk subcommittee. The committee from which this report is generated was comprised of Dr. John Pollard (Chairman; Therion Research Ltd.), Dr. Robert Wright (OMAFRA), Brian Tapscott (OMAFRA), John Rietkerk (Ontario Elk Breeders Association; OEBA), Randy Hentz (Ontario Deer and Elk Farmers Association; ODEFA) and Mabel Dougherty (ODEFA). The central figure currently influencing all aspects of cervid production and breeding in Canada is the outbreak of Chronic Wasting Disease in farmed elk and 2 wild mule deer in Saskatchewan. At present, the mandated slaughter of over 7500 elk has been carried out in the attempt to eradicate this disease from Canada. Due to the significant current concern surrounding the outbreak of CWD, many of the service recommendations contained in this report are related to disease and pathogen surveillance and the short and long term protection of the provinces health of animals. Additional areas of service related concerns, involve the continued evolution of cervid market development in the areas of feed performance trials, domestic and international venison sales and hunting preserve allowance for endogenous Ontario species. The final service recommendation relates to the development of a network of veterinarians within the province, which are trained and equipped to support producers in cases of escaped animals as a part of Ontario's escape protocol.

Mandate

The Deer and Elk Subcommittee has a balanced membership that includes researchers (private sector and University of Guelph), representatives from OMAFRA, producers and the leaders from species producer groups including OEBA and ODEFA.

Deer and elk are not represented in the Animal Research Program of OMAFRA - University of Guelph Research Contract. As a result, the committee comes together knowing that opportunities for funding research and service are limited but present. The committee wishes to commend and support the continuance of the "New Directions" research program, which includes funding of cervid projects. The main purpose for this report is to develop dialogue between the industry, the regulatory and research communities and service organizations to identify service-related issues and needs to OMAFRA and the OARSC.

Industry Sector Scan

Deer and elk have been raised on Ontario farms since the mid 1980s for venison, velvet, hides and live animal sales, either as breeding stock or more recently as stock for hunting enclosures. However, there is no provincial licensing or registration mechanism in place to monitor the number of farm-raised deer and elk. The most accurate population estimates for captive raised deer and elk in Ontario is data provided by the Canadian Food Inspection Agency (CFIA), under the Farmed Cervid Program (formerly called Captive Ungulate Program) which is administered under the Health of Animals Act and Regulations.

Table 1 summarizes the 1999 CFIA data showing there were 354 operations keeping a total of 19,342 animals or an average of 55 animals/operation. It should be stressed these figures represent all deer and elk operations, not just farms, as the CFIA data does not distinguish between farm and non-farm operations (zoos, private and public animal collections). About 60% of the herds have 10 or more animals and these herds account for about 97% of the total deer and elk.

Table 1 – Animal Inventory and Number of Operations Keeping Deer and Elk in Ontario – CFIA, 1999

	Species						
	Elk	Elk/Red Deer Hybrids	Red Deer	Fallow Deer	White Tail Deer	Other Deer	Total Deer & Elk
# of Operations	66	35	97	159	31	7	354
% of Total Operations	19%	10%	27%	45%	9%	2%	100%
# of Animals	2,578	2,013	6,851	6,704	694	502	19,342
% of Total Animals	13%	10%	35%	35%	4%	3%	100%
Average # Animals/Operation	39	58	71	42	22	72	55

Table 2 summarizes the estimated 1999 provincial and national deer and elk inventories and approximate values as provided by the Canadian Cervid Council (CCC). According to the CCC data, Ontario farms accounted for 16.7% (21,100 animals) of the national deer and elk inventory (126,522). Ontario accounted for 62% of the national elk/red deer hybrid population, followed by 49% of the red deer, 27% of the fallow deer, 6% of the elk, 5% of the white-tailed deer and 4% of other deer (including reindeer). The CCC Ontario herd demographics (33% red deer, 32% fallow deer, 16% elk, 12% elk/red deer hybrids, 4% white-tailed deer, 3% other) compare favourably to the CFIA estimates (35% red deer, 35% fallow deer, 13% elk, 10% elk/red deer hybrids, 4% white-tailed deer and 3% other).

With the lack of an accurate and dedicated animal inventory system it is difficult to estimate growth within each of the sectors. The elk and elk/red hybrid sectors have experienced the most growth in recent years spurred on by the relative strength of the breeding stock and antler velvet markets. The fallow deer sector has regressed largely due to lower venison prices. The use of on-farm populations within a defined geographic area (i.e. – Ontario) as the sole measure of the economic strength and stability of a particular sectors can however be misleading, as it does not take animal exports into consideration. For example there has been relatively little growth in the farmed white-tailed deer sector because much of Ontario's production is being exported to Saskatchewan, Quebec, Michigan and other U.S. states, jurisdictions that permit the hunting of farm raised white-tailed deer. In Ontario the Fish and Wildlife Conservation Act, administered by the Ontario Ministry of Natural Resources, does not permit the hunting of farmed white-tailed deer or elk in enclosures.

Statistics Canada's (SC) 1996 Census of Agriculture showed Canadian farms had 69,883 deer and elk and Ontario accounted for 22.5% of the national total or 15,724 animals. Comparing

the SC 1996 inventory to the CFIA and CCC 1999 inventories, the Ontario's deer and elk herd has grown between 23% to 34% over the same three year period.

Table 2 – Canadian Cervid Council's Estimated Inventories of Deer & Elk in Canada as of Oct 1, 1999

Province	Elk	Elk/ Red Crosses	Red Deer	White Tail Deer	Fallow Deer	Reindeer	Other Deer	Total Animals	# of Farms
Yukon & NWT	150					9,500		9,650	8
British Columbia					12,000	400		12,400	60
Alberta	25,000			6,000		225	300	31,525	490
Saskatchewan	21,000			3,000	3,000	50	200	27,250	500
Manitoba	2,000			50	650		30	2,730	95
Ontario	3,300	2,600	7,000	900	6,800		500	21,100	350
Quebec	2,000	1,500	6,500	7,500	3,000		400	20,900	350
New Brunswick	50	60	500	45	12			667	14
Nova Scotia & PEI	35	15	250					300	12
Canada	53,535	4,175	14,250	17,495	25,462	10,175	1,430	126,522	1,879
Livestock Value ($ million)	$374.7	$6.3	$14.3	$52.5	$7.6	$10.2	$0.7	$466.3	
Livestock Value ($/animal)	$7,000	$1,500	$1,000	$3,000	$300	$1,000	$490		

Since the deer and elk farming industry is global in nature it is important to understand Canada's position in the international marketplace. New Zealand is by far the largest producer of farmed deer and deer products with over 1.8 million deer kept on 4,500 farms, which is equivalent to 400 deer/farm. Canada's farmed deer and elk population of 70,000 represents less than 4% the New Zealand herd.

Venison

According to CFIA, there are currently 3 federally inspected plants that process deer and elk in Ontario. The number of provincially inspected plants processing deer and/or elk almost doubled from a total of 15 in 1999 to 29 facilities in 2000. Of the twenty-nine provincially inspected plants, 16 processed fallow deer, 16 handled red deer and 11 processed elk. It should be noted that any provincially inspected red meat plant may process deer and elk. The significant increase in the number of plants handling deer and elk may be more of a reflection on the lack of market infrastructure, than of the interest in processing venison. The majority of those plants handling deer do so on a custom kill basis, thus in these instances the marketing of venison and venison by-products is taken on by the producer. The venison industry, like many other alternative livestock sectors, lacks mature and well-developed market and marketing infrastructure. In the 1999 report the deer and elk industry expressed concern that the number of provincially inspected plants dropped 25% from 20 in 1998 to 15 in 1999. The industry felt the decrease in processing facilities was a direct result of efforts to harmonize Federal/Provincial meat inspection standards, which in many instances would require increased investment by provincially inspected plants to meet federal standards.

The total number of deer and elk processed in provincially and federally inspected Ontario plants are summarized in table 3. The total number of deer and elk processed for meat was down almost 25% in 1999 (2,841) from 1998 (3,773), compared to a 77% increase from 1997 (2,129) to 1998 (3,773). The decrease in overall slaughter numbers is most likely attributed to weaker venison prices in recent years, which has ultimately led to an apparent decrease in the number of breeding females. The weaker venison market has had a more dramatic impact on the fallow deer sector since they are raised predominantly for venison, unlike the dual purpose red deer/hybrid sectors that market both venison and velvet. The apparent decline in the fallow deer sector is closely related to declining venison prices and inefficiencies relating to smaller carcass size relative to other deer and elk

Table 3 - Number of Deer and Elk Processed in Provincially or Federally Inspected Ontario Plants

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Fallow Deer – Provincially Inspected	55	216	143	429	766	520	503	386	399	353
Red Deer – Provincially Inspected	0	123	58	107	151	147	111	134	149	168
Elk – Provincially Inspected	28	42	5	10	23	23	8	11	28	523
All Deer & Elk – Federally Inspected	61	463	1,366	1,197	528	1,922	996	1,598	3,197	1,797
Total Deer & Elk (Federally + Provincially Inspected)	144	844	1,572	1,743	1,468	2,612	1,618	2,129	3,773	2,841

Trends in the slaughter of the various types of deer/elk must be identified from provincially processed animals; since federally inspected plants do not have separate categories. In 1999 the total number of deer and elk processed in provincial plants was 1,044 and was comprised of 34% fallow deer, 16% red deer and 50% elk. The corresponding 1998 figures were a total of 576 animals, made up of 69% fallow deer, 26% red deer and 5% elk.

As noted earlier there is no systematic and timely means of monitoring deer and elk herd inventories in Ontario. Subsequently one can only speculate that a significant decrease in the size of the provincial fallow deer herd, prompted by weaker venison prices, was the main contributing factor in 12% fewer fallow deer being processed in provincially inspected plants in 1999 (353) compared to 1998 (399). A premium is generally paid for red deer and elk/red deer hybrids over fallow deer, because of the larger carcass size and subsequent efficiencies in processing.

There was a dramatic 1768% increase in the number of provincially processed elk 1999 (523) compared to 1998 (28). The increased prevalence of cross breeding elk with red deer to produce elk/red deer hybrids yielding larger carcasses and more velvet has resulted in fewer pure red deer being retained and thus marketed. This also explains the significant shift from

red deer to elk as the hybrid animals are being marketed as elk to gain a marketing advantage. In reality there are very few pure elk being processed for meat due to the relatively strong elk breeder market.

It is interesting to note the percentage of deer/elk processed in federally inspected plants decreased from almost 85% of the total in 1998 to 63% in 1999. Conversely the proportion of provincially inspected deer and elk increased from 15% in 1998 to 37% in 1999. The actual number of animals processed in provincially inspected facilities increased 81% from 576 in 1998 to 1,044 in 1999, while the number processed in federally inspected plants decreased 44% from 3,197 in 1998 to 1,797 in 1999. The most likely explanation for the shift towards the use of provincial plants is the lower processing costs generally associated with provincial plants. A number of producers also expressed concern that distributors and wholesalers were filling orders with imports of lower priced New Zealand venison, thus producers were forced to market their own venison and venison value added products into local markets, hence the increased use of provincially inspected abattoirs.

Despite processing almost 53% (2,841) of the total deer and elk processed in Canada (5,416) in 1999, Ontario and Canada remain relatively minor players in the international marketplace. Table 4 shows Canada's 1999 production of 5,416 animals represents only 1.3% of the New Zealand production (429,000). The actual % on a weight basis is likely lower than 1% when one considers that the Canadian production is presently dominated by the smaller fallow deer (60 lb. carcass weight) while New Zealand's crop is almost entirely red deer (125 lb.).

Table 4 - Number of Deer and Elk Produced in Canada and New Zealand (Source – Canadian Food Inspection Agency & New Zealand Game Industry Board)

	1991	1992	1993	1994	1995	1996	1997	1998	1999
Canada (source CFIA)			3,389	3,335	6,780	6,794	5,118	5,647	5,416
New Zealand (source NZGIB)	202,000	345,200	429,400	351,600	408,000	309,000	313,000	412,000	429,000

Tables 5 and 6 summarize the relative venison exports of Canada and New Zealand, the world's largest exporter. The largest importers of venison are Germany, Switzerland, Australia, Sweden, Japan and U.S. Canada's average venison exports for 1996 to 1998 was 23,591 kg. Which is equivalent to 0.18% of the New Zealand exports (12.8 million kg.) for the same 3-year period. Despite a 7% decrease in the price of New Zealand venison between 1996 and 1998, NZ exports actually grew 1%, while Canadian exports dropped 69% to 11,462 kg. The USA and Japan have traditionally been the largest markets for Canadian venison, importing 44% and 34% respectively of Canada's total venison exports. However in 1998 the USA accounted for 95% of the Canadian venison exports, primarily because there were no exports to Japan. New Zealand's exports to the U.S. has grown 120% since 1991 and approximately 85% of all venison served in U.S restaurants, is imported from New Zealand.

Table 5 - Canadian Deer Meat Exports (kg.) – Canadian Food Inspection Agency

	1995	1996	1997	1998
USA	25,017	15,021	9,963	10,834
Japan	14,396	12,723	10,239	
Hong Kong	11		798	240
Korea		9,219	404	
Other	173	248	698	388
Total	39,597	37,211	22,102	11,462

Table 6 - New Zealand Deer Industry's Exports – Adapted from Statistics New Zealand data

	1996	1997	1998	1999	2000 Provisional
Venison (kg)	13,917,449	11,555,966	14,058,469	17,795,223	17,758, 678
Venison (CND $)	$101,229,520	$96,188201	$94,808,296	$107,636,400	$110,907,820
Venison Price ($CND/kg.)	$7.27	$8.32	$6.75	$6.03	$6.25
Venison Price ($CND/lb.)	$3.31	$3.78	$3.07	$2.74	$2.84
Velvet (kg)	167,780	196,232	218,821	209,336	147,084
Velvet (CND $)	$33,856,080	$35,361,934	$28,479,979	$16,091,454	$18,340,610
Velvet Price ($CND/kg.)	$202	$180	$73	$77	$125
Velvet Price ($CND/lb.)	$92	$82	$33	$35	$57

There is currently only a fair Ontario market for farmed venison, primarily from the hotel and restaurant sectors. The strongest demand is for prime cuts while industry struggles to develop sustainable markets for the secondary and trim cuts. Producers selling venison to wholesalers/distributors have been receiving prices of $2.25 to $2.75/lb. carcass weights, depending on the species. These prices are significantly lower than the $3.00 - $3.50/lb. carcass weight received by farmers prior to 1998, due primarily to an increased international supply of venison.

Producers committed to marketing some or all of their own product(s) to local restaurants, delis or butchers or directly to the consumer by farm gates sales or farmers markets are achieving higher prices ($4 to $5/lb.), which justifies the additional time and expense incurred in developing these niche markets.

The outlook for venison prices will obviously be impacted by New Zealand production. The New Zealand Ministry of Agriculture and Forestry estimates its venison production will increase almost 40% from 1999 (26,000 T carcass weight) to 2003 (36,000 T). As a result NZ venison prices are expected to remain above $5.50 NZ/kg ($1.75 Cdn/lb.).
The question must be asked as to why New Zealand has been so successful in marketing venison? New technologies have made it possible for more than half of all New Zealand

venison to be shipped chill packed, compared to when all exported venison had to be sent frozen. New Zealand is selling "Cervena" and "Zeal" brands which guarantee a consistent product by demanding quality right through the production process, from pasture to plate. The program involves on-farm quality assurance, accreditation of road transport companies, and standards setting for exporters and wholesalers. Certainly some of New Zealand's dominance in the deer/venison market must be attributed to the fact that it also has a dedicated deer research program.

The rise of Chronic Wasting Disease in the province of Saskatchewan has additionally placed export limitations on Canadian venison to the benefit of New Zealand. Over the past year, New Zealand has significantly increased marketing activities and success in the EU. The view of New Zealand venison being a clean and healthy meat source for human consumption has been deliberately and successfully created by the New Zealand meat marketing board on the European Continent. Freedom from CWD has allowed New Zealand producers to continue to increase its market dominance. The eradication of CWD from Canada over the next year should provide opportunity to Canadian producers to benefit from New Zealand efforts in both Europe and the United States to develop markets for farmed venison products.

Velvet

Antler velvet is presently the most valuable product harvested annually from male elk, red deer and elk/red deer hybrids. Most of the velvet is exported to Asian countries, whose cultures have long used velvet products, believing that their use maintains strength, energy and general good health. The Canadian Cervid Council estimated the 1999 harvest of velvet antler from elk and red deer at 430 T for New Zealand, 60 T for Russia, 60 T for China, 52 T for Canada and 40 T for USA.

Korea is the major importer of velvet antler for its traditional medicinal properties. It is estimated Korea imports 90% of the world velvet production. Not surprisingly, New Zealand is the major supplier of velvet antler with 1999 exports approaching 210,000 kg. (210T) according to Statistics New Zealand – table 6. Since the traditional markets for velvet antler are mature, attention is turning to western markets as nutritional supplements for the growing health-food industry.

The demand for Ontario velvet was very strong until 1996, with prices reaching $90 - 100/lb. for elk velvet and $75 - $85/lb. for red deer and hybrid velvet. However velvet prices dropped dramatically in 1998 and 1999 primarily due to the depressed Asian economy, with velvet selling for an average of $25-$40/lb. Prices for the 2000 velvet crop appear to be in the range of $45-55/lb. The historic velvet prices are summarized in Table 7.

Table 7 – Historic Velvet Prices ($/ lb. green velvet) – Source - Ian Thorleifson, Canadian cervid council as presented at the 1999 International Wildlife Symposium, Toronto - Nov 9, 1999.

Year	Price/ lb.	Year	Price/ lb.
1999	$35	1989	$85
1998	$25	1988	$60
1997	$90	1987	$70
1996	$100	1986	$50
1995	$110	1985	$35
1994	$90	1984	$40
1993	$60	1983	$30
1992	$40 (Russian Market Opened)	1982	$50
1991	$95	1981	$65
1990	$90	1980	$90

The outlook for velvet prices like venison will be influenced by New Zealand production. The New Zealand Ministry of Agriculture and Forestry (NZMAF) estimates its velvet production will increase some 60% from 450 T (green weight) in 1999 to 730 T in 2003. It expects demand for velvet to remain firm throughout this period as:

Korea's economy continues to recover;

Korea's exchange rate appreciates against other currencies to above pre-Asian crisis levels;

markets develop for exports of further processed products, especially to the Korea, Taiwan, US and China; and;

wider international acceptance of scientific findings that velvet is an effective ingredient in traditional Oriental medicines, especially in strengthening the immune system, in the stimulation of cell growth, and as an anti-inflammatory agent.
The NZMAF anticipates velvet prices will continue to rise while international demand exceeds supply. Other industry analysts have expressed concern that increased world production of velvet will lead to lower prices as the Korean market can only take 450 – 500 T/year.

Over the course of the 2000 and 2001 velvet seasons, velvet prices and sales have again been significantly suppressed by the closure of Korean borders to the import of North American cervid products due to human health concerns related to the outbreak of CWD. While these borders remain closed at present, the eradication of CWD through mandated slaughter programs in Canada may allow for their reopening during the 2002 season. The closure of Asian markets to velvet exports has significantly depressed all aspects of the elk and red deer industries in North America.
Deer and Elk Prices

Table 8 summarizes prices for elk, red deer, hybrids, fallow deer and white-tailed deer as provided by industry members of Deer and Elk Research & Service Subcommittee & members of Ontario Deer & Elk Farmers Association. During 1998 & 1999 prices dropped 30-50% for elk and 20–50% for red deer primarily due weaker velvet markets.
The white-tailed deer prices have remained reasonably strong, since the breeding stock pool is fairly limited. White-tailed deer are raised primarily to provide "trophy" bucks and breeding stock for hunting enclosures. Since Ontario does not permit the hunting of farmed white-tailed deer and elk, Ontario producers are selling white-tailed deer and elk stock to Saskatchewan, Quebec and the US, thus much of the related value-added and rural economic development benefits such as tourism are gained by these jurisdictions.

Table 8 - 2000 Deer and Elk Prices as Reported by industry Members of the Deer and Elk Research & Service Subcommittee & Members of Ontario Deer & Elk Farmers Association

Species	Mature Males	Bred Mature Females	Yearlings	Calves/Fawns
Elk	$8,500/bull	$6,000 - 10,000/cow	$5,500/female $1,500/male	$3,500/female $1,000/male
Elk/Red Hybrids	$600 - 800/stag (meat value)	$1,000 - $1,200/hind	$800/female $500/male	$400/female $300/male
Red Deer	$500 - 600/stag (meat value)	$750-$1,000/hind	$500/female $300/male	$400/female $200/male
White Tailed Deer	$1,000 - $3,000 for 140 BC score* buck $8,000 – 12,000 for 180 to 200 BC score* buck $20,000 - $80,000 for > 200" B&C score buck	$1,200 - 6,000/doe	$1,000 - 6,000/female $500 - $3,000/male	$500 - $5,000/female $500 - $4,000/male
Fallow Deer	$300 - $400/buck	$250 - $350/doe	$200/buck $150/doe	$100

*** - B&C Score = Boone & Crocket Score measures the size of the deer's antler**

Over the 2000 and 2001 seasons, breeding animal values have fallen significantly, particularly for elk. Devaluation has not happened for trophy animals, however. It is believed that this devaluation is temporary and related to the current CWD crisis and its overall impact on industry profitability and the exportability of cervid products.

The Ontario elk industry has readily and broadly accepted artificial insemination (AI). AI commitments where fully booked for the 2000 and 2001 breeding seasons. Elk semen prices range from $350 to $1,200/straw depending on volume purchased, with top quality bull semen bringing up to $2,800/straw. A tremendous amount of Ontario elk semen is being exported. Selected white-tailed deer producers are also utilizing AI to enhance genetic improvement. White-tailed deer semen from Ontario is selling for between $500 to $2,000/straw, mostly into the US and Saskatchewan.

Elk and Deer Service Priorities and Recommendations

Service Priority Area I - Animal Health

Recommendations

Increase field study activity and basic research in the area of disease/pathogen surveillance in farmed Ontario deer and elk herds. (The committee wishes to express its full support for the continuance of OMAFRA's New Directions in Agri-Food and Rural Research Program.)

1a. Coordinate and integrate Ontario cervid population and health status data so to facilitate meaningful disease surveillance analysis and the development of effective health promotion programs.

1b. Increase and simplify the transfer of disease testing, health certification and import-export regulatory information to Ontario deer and elk producers through a centralized /integrated web site with downloadable reports and forms.

The committee suggests that CFIA immediately establish and implement an accreditation procedure for veterinarians in Ontario, so that, farms requesting registration in the CCC-CWD accreditation program may be serviced. The committee highly commends the ongoing OMAFRA program for veterinary practitioner training in the collection of OBEX material for CWD testing, and additionally suggests that this program be integrated into the CFIA certification program for Ontario veterinarians.
Establish a political lobbying program to promote the drafting of legislation for the creation of an Ontario Animal Health Act.
3a. Coordinate lobbying activities with other livestock species groups.
Develop simplified and effective pathogen (particularly CWD) testing procedures for use with live animals.
Develop long and short-term solutions for the disposal of elk and deer carcasses and abattoir offal across the province.
Development and coordination of training and accreditation programs for elk and deer producers to meet anticipated compliance requirements for the Livestock Medicines Act.

Issue

The outbreak of Chronic Wasting Disease (CWD) in Saskatchewan elk has brought increased awareness in the Ontario elk and deer industry of the need for basic information related to the prevalence of pathogen infection and disease in the Provinces herds. Little or no information is currently available pertaining to disease prevalence in Ontario cervids as disease surveillance studies have not been conducted. The tragic outbreak of CWD in the west has also stimulated interest in the development of farm accreditation programs related to CWD status, better pathogen testing procedures for use in screening live animals, as well as, the creation of legislative tools for the protection of the health status of animals within the Province. The western CWD crisis has additionally precipitated the rejection of elk and deer carcasses and abattoir offal from the Provinces largest rendering plant even though no case of CWD has been reported in Ontario. Development of alternative carcass disposal systems has thus become an

immediate concern to this industry. Finally, elk and deer producers will be challenged to meet the anticipated legislative educational and accreditation requirements of the Livestock Medicines Act, which will come into effect in April of 2003.

Target Agency:
Recommendation:

1. OMAFRA, OVC, CFIA
1a. CCC, CFIA, OMAFRA
1b. OMAFRA, OBEA, ODEFA
2. CCC, CFIA, OEBA, ODEFA, OMAFRA
3. CCC, OEBA, ODEFA
4. CFIA, University of Guelph
5. CCC, OEBA, ODEFA, OMAFRA, Rendering Industry
6. ODEFA, LMEP

Background

Issues related to animal health and disease control have risen to a place of prominence in the Ontario Cervid industry. Outbreaks of Chronic Wasting Disease (CWD) in Saskatchewan and the mandated slaughter of over 7500 farmed elk in that province are driving such concerns within the Ontario industry. The outbreak of CWD has resulted in the closure of Asian borders to the import of all cervid products from Canada. These border closures have in turn resulted in a significant devaluation in animal and animal product values in the cervid industries within the province over the past year. While much of the current concerns are directed at issues specific to CWD, the occurrence of this disease has generated significant interest generally in the area of animal health, disease testing, disease surveillance, as well as, issues related to the control of animal imports and exports from the Province. In addition, the current closure of international markets to Canadian cervid products has highlighted the dependency of the provincial cervid industries on export dollars and is in turn simulating industry recognition for the need to more fully develop domestic markets for venison and trophy animal harvesting.

Service Priority Area II – Industry Promotion

Recommendations

Establish a political lobbying program to promote the legalization of commercial hunting preserves in Ontario for the harvest of trophy elk and white tail deer.
Increase market development activity for the promotion of domestic and international sales of Ontario venison.

Promote the development of more federally licensed abattoirs accepting farmed elk and deer for slaughter.

Establish on-farm performance trials for the development and testing of feed rations designed to maximize antler growth in Ontario elk and deer.

Target Agency
Recommendation:

1. **CCC, OEBA, ODEFA**
2. **CCC, OEBA, ODEFA, Food Industry Division - OMAFRA**
3. **CCC, OEBA, ODEFA, CFIA**
4. **University of Guelph, Feed Suppliers (Feed Industry)**

Service Priority Area III – Industry Services

Train selected veterinarians that are distributed throughout the Province in the use and operation of tranquilizer guns. Distribute tranquilizer guns and species appropriate anesthetic drugs to these trained veterinarians for use with escaped cervids. Integrate this network of trained and equipped veterinarians into the Provincial Escape Protocol notification system so that they may assist cervid producers in the recapture of escaped animals.

Target Agency
Recommendation:

1. **OVC, OVMA, OMAFRA**

Equine

Equine Subcommittee

Executive Summary

This report was prepared following the annual committee meeting held on October 10, 2001 at the Ontario Veterinary College. The report attempts to present an accurate analysis of the equine industry based on the discussion and information of the participants, and to examine and review the priorities set out last year and the projects that have been started in the first of our four-year mandate.

Although the economy seems to be slowing, all representatives report that their sectors are still healthy including growth in many. After reviewing priorities and projects the committee focused on the services present and future for the industry and issues emerging in the different sectors.

The committee concluded that although there have been some signs of slowing, the industry is still strong and those problems facing it are concerning emerging disease issues like West Nile Fever and Neonatal Loss Syndrome, as well as lack of services and support for the industry; there being a lack of educated qualified horsemen and personnel e.g. farriers and dedicated specialists, to act as resource people and to continue programs of research and development.

The committee was pleased to support the new agreement of memorandum between the Equine Research Centre and the University of Guelph and look forward to the changes in dissemination of information, training and communication to the industry.

Mandate

Through representation from the equine industry, this committee is to identify, review and recommend priority areas of equine research and service needs by assessing current, future and emerging issues relevant to the industry.

Duties and Terms of Reference of the Committee

i) To review equine research and service being carried out in Ontario.
ii) To discover and disclose problems requiring investigation that face the equine industry.
iii) To assess the relevance of research and service programs and suggest priorities for research efforts, especially those funded by OMAFRA, and to recommend what programs underway should be continued, expanded or terminated.
iv) To estimate the costs involved to conduct the recommended research and service programs and to supply cost benefit information if possible.
v) To supply information and recommendations in written reports to OARSC.

vi) To function through an animal species chairperson who will be appointed through OARSC. The appointment of the chair will be for a 4-year period. He or she will not succeed him or herself, but may serve an additional 4-year period with at least a 4-year absence between each period.

State of the Equine Industry

Over the past year little has changed in the industry, with the exception of effects of current events, the equine industry tends to be strong in Ontario. Land used for horse production is approximately 1,000,000 acres with horses consuming 21% of forage and mixed grain crops. (OVMA/OAEP 2000)

The racing industry continues to be strong with one new track, Georgian Downs, opening south of Barrie Ontario. The overall handles tend to be up and the revenue from video lottery terminals continues to pump much needed money into the industry in the form of increased purses and track improvements. Although initial reports of the fall sales were low, the overall sales revenue was marginally lower or equal to that of last year. Some believe this may be the result of a 'claiming market' meaning that due to the very lucrative purse dollar the horseracers are looking for animals to go into racing right away, thus claiming horses or investing in horses of racing age.

The performance and pleasure horse industry is also fairly strong with reports from industry representatives of increases in horse sales and the demand for schooling and lessons as well as increased numbers of horse shows. The Ontario Equestrian Federation reported an increase in the numbers of horse shows licensed this year.

These trends continue to put pressure on the demand for qualified people in all areas of the horse industry as well as a demand for appropriate research into keeping horses in production longer and decreasing wastage of horses in all disciplines.

Equine Service Priorities and Recommendations

Since the last report major goals for each priority have been assigned. Having set these goals, research is already under way in many of these areas.

Discussion at this years meeting dealt with reviewing our present priorities and on services - both those in place and those required by the industry.

Dr. Robert Wright gave a presentation of the current OMAFRA Extension Services. The committee was informed of the memorandum of agreement between the Equine Research Centre and the University of Guelph. The representatives felt this was a very favourable agreement, which would greatly benefit the equine industry.

The committee discussed the need for more research in the area of alternative medicine and nutraceuticals however, did understand that research in these areas might be difficult due to lack of solid scientific method with many of the products and claims. The committee is pleased that within the priorities there is room to investigate these areas and encourages researchers and reviewers to present projects in those areas.

It was strongly felt that this industry is under serviced in the area of qualified horse people. The present low number of horseman training courses (Kemptville) is not keeping up with the demand for qualified individuals to work in the industry as farm staff, breeding attendants, grooms etc.. Industry would be greatly serviced by introducing facilities in the areas of greatest horse concentrations around the proveince, perhaps at the University of Guelph to produce diploma or degree courses in equine sciences. It has been recognised that the Racing Commission, Ontario Horse Racing Industry Association, as well as the public are concerned that there should be a training program for all levels of those working in the racing industry to provide competent, responsible people to care for the racing animal.

It has also been noted that certain skilled trades within the industry are under supported by qualified personnel and or training courses. The farrier trade is one such trade for there is no Farrier's College in Ontario and the concern for the lack of qualified farriers in the future is a reality.

The committee is concerned at the loss of qualified nutritional personnel and reproduction personnel at the university.

With the retirement of Dr. Burton, no equine nutritionist will be on staff at OAC. The reproduction department at OVC also lacks qualified equine specialists to support the industry. The loss of these positions and personnel greatly inhibits the resources to the industry as well as the ability to perform cutting edge research. The committee thought that by assigning both equine nutrition and equine reproduction a priority, it was sending a clear message to both OMAFRA and the university of the importance of these areas and the need for qualified personnel and resources.

A letter was written and sent to the respective Deans and Chairs of Departments at OAC and OVC requesting they address the deficiencies in the reproduction and nutrition departments and that these positions be filled and maintained with individuals specializing in the equine species. A request was to have a better method of research information disseminated which would unite the ERC and extension offices to provide not only information dissemination but also learning to the horse industry.

Recommendations

Research

1) More research be performed in field study manner or clinical trials. Action: Inform equine research chair.

2) Investigate and support projects in alternative medicine and or pharmaceuticals. Action: Inform equine research chair.
3) Develop new and more equine science courses, diploma or degree courses in more locations in the province. Action: Letters to University of Guelph, OMAFRA, Ministry of Education, industry groups i.e., OHRIA to seek assistance and support for developing courses.
4) Develop more continuing education courses for horsemen. Action: Letter to ERC and OMAFRA Extension Offices.
5) Develop or maintain programs to train skilled equine trade i.e., farrier's training. Action: Letter to Ontario Farrier's Association for support and request for representation on OARSCC Committee. Letter to OMAFRA and ED minister.
6) To maintain key positions at the University of Guelph dedicated to equine reproduction science and nutrition. Action: Letter to deans and chairs of OAC and OVC.
7) Promote a present, or the formation of a new organization that could represent the industry and breed sectors. This body would present the collected voice of these groups on a provincial and federal level to other industries, institutions and government. Action: none taken at this time.

Fur-Bearing

Fur-Bearing Subcommittee

Executive Summary

The Fur-Bearing Subcommittee met on October 12, 2001 at the Government of Ontario building, 1 Stone Road West, Guelph. Unfortunately several subcommittee members, including the fox and chinchilla representatives, were unable to attend. The subcommittee membership list is included in Appendix I. The subcommittee initially focused on identifying key issues facing the Ontario fur farming sector, then proceeded to identify and prioritize the strategic services needed to capitalize on the opportunities and overcome the challenges.

The subcommittee also reviewed the research priorities identified in the 2000 strategic report and minor changes were made to Recommendations #1, #2 & #5.

Industry representatives from the Ontario Mink Breeders Association and the Canada Mink Breeders Association expressed thanks to OMAFRA's Special Research Fund for approving funding for the "Investigation of Epizootic Catarral Gastroenteritis (ECG) of Farmed Mink".

The subcommittee was informed by Katherine Hoffman, OMAFRA that research funding for alternative livestock, including fur farmed species, is available for 2001/2002 under OMAFRA's "New Directions in Agri-Food and Rural Research Program" which replaces the Special Research Fund. The call for proposals under the New Directions in Agri-Food and Rural Research Program was issued September 28, 2001 and proposals are due December 3, 2001.

The fur farm industries recognize the importance of research in enhancing their position in a competitive global market. The Canadian fur farm industry's average research budget is approximately $70,500/year, based on a 5-cents/pelt check off. The fur industry is very interested in pursuing cost-shared research with the University of Guelph, OMAFRA, ARIO, CARC, NSAC and other research institutions involved in fur farm related research.

Mandate

The main objective of Fur-bearing Research and Services Subcommittee is to review current and completed research and services in Ontario and other jurisdictions, and to subsequently identify and prioritize industry research and service needs based on the key industry issues. These priorities are to be used to allocate public research funds made available to the fur farming industry. The subcommittee's mandate also includes identifying emerging issues facing the industry and drafting a state of the fur farming industry report. The subcommittee's terms of reference are included in Appendix II.

Major Accomplishments Since Last Strategic Report

Industry representatives from the Ontario Fur Breeders Association and the Canada Mink Breeders Association thanks OMAFRA's Special Research Fund for approving funding for the "Investigation of Epizootic Catarral Gastroenteritis (ECG) of farmed mink" being conducted by Dr. Bruce Hunter & Dr. Dongwan Yoo, University of Guelph.

Subcommittee Activities

The subcommittee also reviewed the following research related items:

- Canada Mink Breeders Approved Research for 2000/2001
- Summary of Fur-Bearing Research Included in the Inventory of Canadian Agricultural Research (ICAR) System;
- On-Going Fur Farm Projects - Nova Scotia Agricultural College;
- Mink Farmers Research Foundation Research Priorities – March, 2000;
- Mink Farmers Research Foundation Approved Funding for 1999-2000;
- Summary of Fur Farming Research Conducted by Danish Institute of Agricultural Sciences, Ministry of Food, Agriculture and Fisheries;
- Scientifur Journals – Scientific Information for Fur Bearing Production.

State of the Industry Report

Greg Fries presented a state of the industry report on the mink-farming sector. Gerald Golem was not able to attend the meeting but did provide a written overview of the chinchilla sector, including issues and service priorities of the sector.

Statistics Canada collects and compiles fur farm statistics that encompasses farmed mink and fox. The data does not include the total number of fur farms including other species (i.e. – chinchilla), nor does it account for farms that raise multiple species (i.e. - a farm raising both mink and fox is considered two separate farms). Based on Statistics Canada data and personal communication with the Ontario Breeders Association, OMAFRA estimates there are75 fur farms in Ontario in 2001 (Table 1), about 7%more than in 2000 and 56% less farms than there were in 1992. The fox sector accounts for most of the reduction in farm numbers due to depressed pelt markets during most of the 1990's.

Table 1 - Number of Ontario Fur Farms – Mink & Fox - OMAFRA (* - estimated figure)

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
# Farms	171	143	128	122	111	95	90*	80*	70*	75*

Mink

The mink industry has been receiving a fair but moderate return for its product during the past several years. Since the mink sector markets a luxury item to an international market, the industry's prosperity depends heavily on the overall global economy. Generally if the economy is booming, so is the mink industry. Up until the September 11 disaster in New York, the world market conditions seemed reasonably strong, with China and Russia being the key markets. Recently Hong Kong has reported some order cancellation for the United States but other markets in China and Russia are holding despite the economic downturn. The fashion industry is very pro-fur and the mink sector anticipates a good selling season in 2001-2002.

Over the past 5 years the economy has been relatively strong, particularly in North America, and mink prices as outlined in table 2 have remained above the $35 mark, with the exception of 1998. According to North American Fur Auctions (NAFA) the average price received in 2001 (2000-pelt crop) was $45.82, which was unchanged from the $45.77 received in 2000. With pelt prices of $46/pelt, mink farmers can generate a profit in the range of $15-20/pelt depending on feed costs. Despite strong market conditions, increasing overhead costs have increased more than pelt prices; thus producers' profit margins are reduced.

Table 2 provides a statistical overview of the Ontario mink farming industry. The number of mink farms decreased 3.4% from 58 in 2000 to 56 in 2001; however, the total number of female breeders increased 6.3% from 62,320 females in 2000 to 66,240 in 2001. The average herd size increased 10% from 1,074 females in 2000 to 1,183 females in 2001. According to Statistics Canada, Ontario mink farmers produced 259,400 pelts in 2000, which is basically unchanged (+0.2%) from the 258,800 pelts produced in 1999. It should be noted however that NAFA reported marketing 286,980 mink pelts from Ontario in 2000/2001, which does not include Ontario pelts marketed at other auction facilities. This would suggest the total Ontario mink crop in 2000 was well over 300,000 pelts. According to NAFA, Ontario produced 35.4% (286,980) of the 810,377 Canadian mink pelts that were marketed by the NAFA in 2000. Statistics Canada's overall figures (including pelts marketed outside of NAFA) show that Nova Scotia produced 38.9% (417,600), Ontario 24.1% (259,400), British Columbia 21.5% (231,400), Quebec 5.1% (54,800) and Manitoba 3.3% (35,500) of the 1,074,500 Canadian produced pelts.

Canada's 2001 production may be as much as ¼ kit/litter (5%) lower than last year due to prolonged periods of excessive heat during the spring and summer months. Despite this unconfirmed poorer production, Ontario will still likely produce 300,000+ pelts, worth in excess of $13.8 million in farm gate sales.

Again in 2001, buyers paid a premium for male pelts. For female pelts, buyers were more interested in quality, with size being an almost equally important consideration. Based on the figures provided by NAFA, it is estimated the average pelt prices were $53.53 for males and $37.59 for females during the 2001 auction season (2000 pelt crop).

Table 3 shows the average pelt prices paid for various pelt types (colours) for 2000-pelt crop ranged from $38.49 for demi mink to $61.51 for sapphire mink. It should be noted however that about 89% of Ontario's 2000 pelt crop was comprised of mahogany (49.5%mahogany @ $44.68), black (22.5% @ $51.99) and demi/wild (16.5% @ $38.49). The largest changes in the percentage of Ontario's mink production by variety from 1999 to 2000 occurred in mahogany (-3.6%), demi (+2.8%) and dark (0.6%). The percentage of the other pelt types remained virtually unchanged.

The biggest buyers of North American mink pelts were China, Korea and Russia, followed by Greece and Hong Kong. Overall a stable market seems to be in the horizon, with China commanding a strong market for at least the next five years.

Mink rations utilize 20-25% cereal products and 75-80% meat by-products ingredients including beef, pork, chicken, turkey, fish, and cheese by-products. Most traditional feed ingredients are readily available; in fact with HACCP requirements it is anticipated that the supply of meat by-products will increase. Quality protein feeds are more expensive than in 2000 with liver being the most expensive.

Good labour at peak times (pelting season) on the ranch is very hard to find in most areas of the country. Many of the larger farms are importing technology (bedding machines, automatic skinning and fleshing machines) from Denmark to reduce their reliance on the local labour force.

Table 2 - Ontario Mink Production Statistics – Statistics Canada

Year	# Mink Farms	Total # Female Breeders	Average Farm Size (females)	Total # Mink Born	# Mink Born Per Female	Total # Mink Pelted	# Mink Pelted Per Female	Average Pelt Price[1]	Farm Gate Revenue (millions)
1992	109	92,047	837	385,022	4.2	384,604	3.2	$20.62	$7.9
1993	99	76,902	801	313,519	4.2	298,517	3.9	$37.62	$11.2
1994	86	76,915	874	327,781	4.3	315,589	4.1	$31.97	$10.1
1995	84	75,490	899	327,600	4.3	315,693	4.2	$65.00	$20.5
1996	76	74,560	981	336,000	4.5	319,000	4.3	$46.65	$14.9
1997	70	77,840	1,110	330,100	4.2	322,300	4.1	$43.02	$13.9
1998	67	79,000	1,180	316,000	4.0	288,700	3.7	$32.92	$9.5
1999	63	63,760	1,012	272,100	4.3	258,800	4.1	$45.77	$11.9
2000	58	62,320	1,074	270,200	4.3	259,400	4.2	$45.82	$11.9
2001	56	66,240	1,183[2]	285,000[2]	4.3[2]	261,800[2]	4.2[2]	Not Sold	Not Sold
2001/2000	96.6%[2]	106.3%[2]	110.0%[2]	105.5%[2]	100%[2]	101%[2]	100%[2]	-	-

1 - pelt prices provided by North American Fur Auctions
2 - estimated figures

Table 3 – Average Pelt Prices for 2000 Ontario Pelt Crop Marketed in 2001 by North American Fur Auctions (by pelt type)

	% of Total Pelt Crop Marketed by NAFA		Average Pelt Price (Canadian $)		Average Female Pelt Price (Canadian $)		Average Male Pelt Price (Canadian $)	
	2000	1999	2000	1999	2000	1999	2000	1999
Iris	0.9%	1.1%	$55.88	$49.80	$41.93	$40.64	$67.78	$60.02
Mahogany	49.5%	53.1%	$44.68	$45.01	$37.18	$37.24	$52.00	$52.68
Demi	16.5%	13.7%	$38.49	$41.32	$29.26	$32.41	$46.91	$48.52
Black (Dark)	22.5%	21.9%	$51.99	$51.13	$44.71	$42.71	$58.82	$59.98
Misc. Mutations	NA	0.2%	NA	$30.71	NA	$23.42	NA	$38.34
Pastel	6.7%	6.4%	$43.57	$41.70	$32.17	$30.68	$53.12	$51.77
Pearl	NA	>0.1%	NA	$34.84	NA	$30.58	NA	$43.18
Sapphire	2.6%	2.7%	$61.51	$51.77	$47.71	$41.61	$73.27	$60.77
Silverblue	NA	0.2%	NA	$39.35	NA	$26.93	NA	$54.78
Violet	NA	0.2%	NA	$50.22	NA	$39.12	NA	$61.16
White	NA	0.4%	NA	$35.66	NA	$23.87	NA	$48.27
Aleutian	NA	0.2%	NA	$32.35	NA	$28.97	NA	$38.43
Other	1.2%	NA	$47.91	NA	47.91	NA	NA	NA
Total	100%	100%	$45.82	$45.77	~$37.59	$37.49	~$53.53	$53.79

Fox Farming

The long term depressed prices have lead to a significant decrease in the size of the Ontario fox farm sector. Table 4 shows the number of fox farms decreased 21% (from 19 in 2000 to 15 in 2001) and the number of breeders kept declined 2.5% from 639 females in 2000 to 623 in 2001. The average herd size increased 24% from 34 vixens in 2000 to 42 in 2001. In 2000 Ontario produced only 6.2% (1,140) of the total Canadian fox pelt crop (18,440), ranking 7^{h} overall behind Quebec (20.6% or 3,800 pelts), Nova Scotia (19.4% or 3,580 pelts), Newfoundland (16.8% or 3,100 pelts), British Columbia (11.0% or 2,030 pelts), New Brunswick (10.7% or 1,980pelts) and Prince Edward Island (1,670 pelts or 9.1%).

Table 4 - Ontario Fox Production Statistics

Year	# Fox Farms	Total # Female Breeders	Average Farm Size (# females)	Total # Fox Born	# Fox Born/ Female	Total # Fox Pelted	# Fox Pelted/ Female	Average Pelt Price[1]	Farm Gate Revenue (000's)
1992	74	2,176	29	3,766	1.7	4,038	1.9	$31.30	$126.4
1993	57	1,719	30	2,879	1.7	2,910	1.7	$83.85	$244.0
1994	50	1,560	31	2,633	1.7	2,406	1.5	$72.00	$173.2
1995	47	1,605	34	2,427	1.5	2,316	1.4	$68.00	$157.5
1996	43	1,388	32	2,290	1.7	2,090	1.5	$83.53	$174.6
1997	32	1,403	45	2,500	1.8	2,430	1.7	$87.42	$212.4
1998	31	1,180	38	1,980	1.7	2,350	2.0	$50.24	$118.1
1999	26	773	40	1,880	2.4	1,730	2.2	$74.14	$128.3
2000	19	638	34	1,330	2.1	1,140	1.8	$83.49	$95.2
2001	15	623	42	1,300[2]	2.1[2]	1,121[2]	1.8[2]	Not Sold	Not Sold
2001/02	79%	98%	124%	98%[2]	100%[2]	98%[2]	100%[2]	NA	NA

1 - pelt prices provided by North American Fur Auction
2 - estimated figures

The 2001 selling season (2000 pelt crop) for ranched fox was somewhat stronger than in 2000 with the average pelt price being 12.6% higher in 2000 ($83.49) than in 1999 ($74.14). As of August 2001, NAFA reported 70% clearance of the 798 Ontario silver fox pelts that it offered for sale. The average price of silver fox pelts, which represents 81% of Ontario's production, was $81.35. Table 5 summarizes the average prices received for the main fox varieties produced by Ontario and marketed by NAFA.

Table 5 – Prices of Main Fox Varieties Marketed by North American Fur Auctions in 2001 (2000 pelt crop)

Pelt Variety	# Pelts Produced in Canada	# Pelts Produced in Ontario	Ontario's Production as % of Canada	% of Total Ontario Pelt Crop	Ontario Average Pelt Price (Cdn $)
Sliver Fox	15,730	798	5%	81%	$ 81.35
Blue	275	0	0%	0%	---
Pearl	237	50	21%	5%	$ 51.18
Red	78	5	6%	1%	$ 83.00
Dawn Glo	133	133	100%	13%	$108.50
Total Foxes	16,453	986	6%	100%	$ 83.49

Chinchilla

The chinchilla industry is experiencing an unprecedented over supply of pelts on the market. The over supply is due to a doubling of world production and not due to a decline or loss of a particular market segment. The increase of ranchers and production is occurring primarily in Eastern Europe (Balkan States, Poland, Hungary, Turkey,...), areas reported to be heavily subsidized by governments with support by the World Bank. World production is normally 250,000-300,000 pelts per year, but it is estimated that over 500,000 pelts were put on the market in 2000. Compared to mink this may seem small numbers, however, remember that chinchilla fur does not handle poor weather or wet conditions, so its market is high end formal wear to upper class, wealthy customers.

Promotion of the trim market, which is growing at this time, is imperative to consume the over-supply of pelts. On a global basis, the trim market is good but until Japan and Asia come out of their economic problems or world production declines, prices which declined by 50 per cent in early 2001 will continue to be under great pressure. The emerging China market does not hold much hope at this time and market experts do not anticipate a price turnaround for 1½ to 2 years.

Three marketers were actively buying and/or marketing chinchilla pelts in Ontario during 2000 - North American Fur Auctions (NAFA), Toronto; Canchilla Associates, London, Ontario; and Rosenfeld Inc., New York, USA. NAFA estimates marketing approximately 8,000 pelts from Ontario ranches at an average price of $25.30 US. Canchilla purchased approximately 7,000 pelts at an average price of $30.00 US and Rosenfeld purchased approximately 7,000 pelts at an average price of $26.00 US. Pelts inventories basically cleared out in 2000 but in January, February and March of 2001 inventories were failing to move and prices were dropping. In September, NAFA sold approximately 40 per cent of their offering at $15.00 to $18.00 US.

Chinchilla pelts must be dressed prior to marketing, at the rancher's expense of $4.50 to $7.00 per pelt. The European dressing procedures are reported to be superior to Canadian and American pelt dressing, thus giving Euro-pelts a market advantage. Ontario ranchers have discussed shipping raw pelts to Denmark for dressing and marketing however costs at this time are a problem.

The number of chinchilla ranches in Ontario at the beginning of 2001 was approximately 150, with an average herd size of 60-80 breeding females. As a result of weak markets, some herds are for sale or planned for pelt-out this winter. The cost of production (excluding labour) is estimated at $17-20/pelt, with feed accounting for $10/pelt. With pelt prices approaching cost of production, many ranches with less equity may be lost. Farm income support payments are difficult to obtain if a rancher holds inventory for two years, waiting for higher prices

Table 6 summarizes auction results reported by North American Fur Auctions since 1995/96.

Table 6 - Chinchilla Sale Results Reported by North American Fur Auctions

Year	# Chinchilla Pelts Offered/Sold By NAFA Auction		Average Chinchilla Pelt Price
	Ontario	Canada	
1995/96		14,673	$56.00
1996/97		10,356	$57.35
1997/98		2,316	$51.28
1998/99	2,525	4,994	$44.60
1999/2000	3,714	7,442	$49.11
2001/2002	3,605 (60% sold)	7,880 (60% sold)	$38.89 ($25.30 US)

The 2001 service and research recommendations, ranked in order of priority are:

Service Recommendations

1. De velop short-term and long-term environmentally sound solutions for disposing of carcasses, fat from the pelting process and other-byproducts such as manure and bedding materials. There is also a need and an opportunity to substantiate and promote the industry's contributions and SERVICES from an economical, environmental and societal perspective.
2. Maintain the current level of staffing providing government liaison, policy and technology transfer services to the fur farm sector.
3. Conti nued access to animal health diagnostic and laboratory services.
4. Support short term research funding ("New Directions in Agri-Food and Rural Research Program") until solutions can be developed to allow for fully funded research to be conducted at the University of Guelph.
5. De velop a fur-farm specific livestock medicines course.

Goat

Goat Subcommittee

Executive Summary

Growth within the goat industry continues at an exceptional rate. Commercial producers face similar challenges that other livestock commodities within Ontario will be dealing with over the next five years. As well, there are issues unique to goat production that need to be dealt with to enable profitable production, and hence industry growth to occur.

Mandate

- To review goat research and services being carried out in Ontario.
- To identify problems facing the goat industry requiring investigation.
- To assess relevance of research and service programmes and suggest priorities for new research.
- To recommend the expansion or termination of programmes already under way.
- To assess programmes on a cost benefit basis.
- To liaise with researchers and producers on the progress of research and services.

Industry/Sector Scan

Meat Goat Sector

Slaughter Statistics

Provincial slaughter continues to gradually increase. Slaughter in 2000 was 11.5 percent higher than in 1999. The first 9 months of 2001, 14, 611 head of goats were slaughtered, virtually unchanged from 2000. Monthly volume is fairly consistent throughout the year, with the exceptions of December and March/April where larger volumes reflect demand of ethnic festivals. The following table shows the change in goat slaughter over the past six years.

Yearly Provincial Goat Slaughter in Ontario

1996	1997	1998	1999	2000	2001*
13,987	19,034	18,393	19,502	21,736	14,611

*January to September 2001 SOURCE: FOOD INDUSTRY DIVISION, OMAFRA

M121

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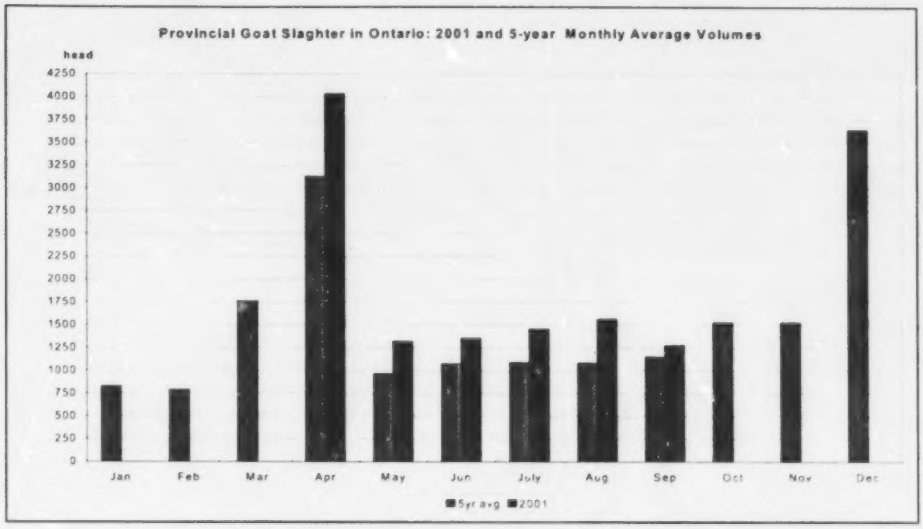


Imports of Goat Meat Into Canada

Imports of goat meat into Canada increased significantly during the year of 2000. To December 31, 2000, a 31.5 perceint increase, or 884,726 kilograms of goat meat entered Canada, up from 672,810 kilograms in 1999. During the first 6 months of 2001,imports of goat meat have declined by 66.0 percent compared to the same period last year. Australia continues to supply the largest portion of imports. In the late 1980's and early 1990's, New Zealand was our major supplier of goat meat, but was surpassed by Australia in the mid 1990's.

Imports into Ontario account for 74.0 percent of total imports during 2000. This hase varied from 47 to 75 percent of total imports during the past five years.

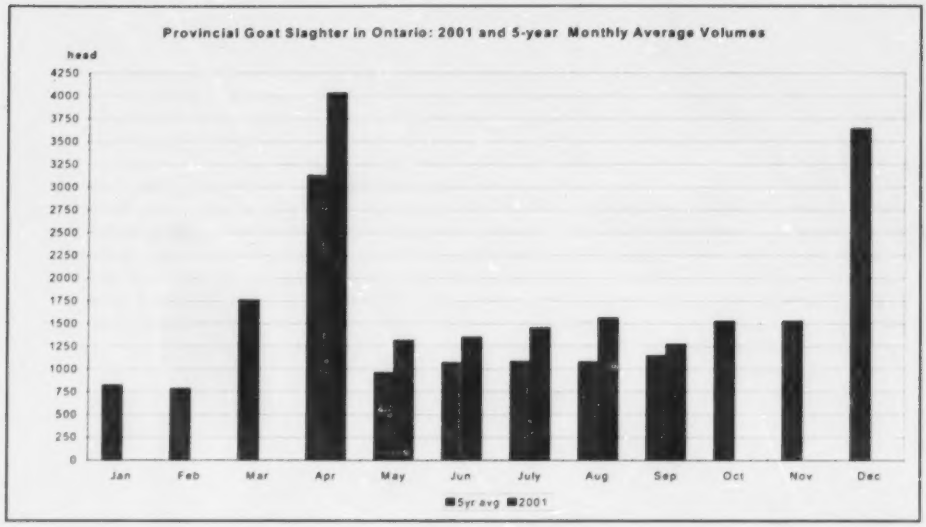
The only year Canada imported goat meat from the United States was 1997, when 35, 018 kilograms from Nevada, New England and Florida came into Ontario and British Columbia.

The value of goat meat imports represented 2.8 million Canadian dollars in 2000 compared to 2.1 million Canadian dollars in 1999. Average price per kilogram has increased to $3.28, compared to $2.48 in 1995.

Volume and Value of Goat Meat Imports into Canada, by Country

	New Zealand	Australia	Total Wt (kgs)	Value Cdn $$	Value Per Kg
1995	163902	1041341	1205243	2991535	2.48
1996	149695	574556	724251	1989570	2.75
1997	306951	705092	1047061	3034510	2.90
1998	191611	589601	781212	2456074	3.14
1999	110615	562195	672810	2102801	3.13
2000	100956	783770	884726	2806900	3.28
2001*	13984	443707	457691	1502049	3.28

*to August 31, 2000 SOURCE: STATISTICS CANADA



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Ontario Market Prices

Industry participants report that prices during 2000 have remained fairly stable compared to 1999. Boer, and boer-cross kids continue to attract premium prices, of up to $15 per kid higher than other kids.

Dairy Goat Sector

The commercial goat milk industry continues to enjoy rapid growth. Total number of licensed producers shipping milk has increased from 121 in 1999 to 180 this year.

According to Ontario Goat Milk Producers' Association (OGMPA), there are currently 13 processors licensed to use goat milk in the province. OGMPA also estimates that over 10 million litres of goat milk was processed during 2000. This represents an increase of 20 percent compared to last year's industry wide estimate of 7.5 to 8 million litres. Supply continues to fall short of demand.

Producers shipping to the largest buyer of goat milk are being paid based on milk component levels since March 2001.

Cheeses remain the number one product being processed from goat milk, with new and regular varieties being produced. The remainder of milk is processed into yogurt, ice cream, butter, powdered milk and fluid milk. Currently, three of the 13 processors package fluid milk. OGMPA reports that, although the majority of consumers still drink goat milk for health reasons, such as food allergies, an increasing number are attracted to goat milk's natural image and reputation. OGMPA stresses the importance of this image not being compromised.

Imports of Cheeses

Canada continues to import a considerable amount of specialty cheeses into the country. Import data for cheeses are reported by variety – one of which is specifically goat's milk cheese. From the table below, one can see the dramatic increase in importation of goat milk cheese (double that of 1997 and 13 times more than in 1993!!). Although not indicated in the statistics, we can assume that some portion of varieties like **feta, the cream cheeses, soft cheeses, and some of the hard cheeses** is also goat milk product. What that portion represents, is difficult to assume. The following table provides figures for imports of goat milk cheese and "typical" varieties of which some portion may be goat milk cheese.

Table 1: IMPORTS OF SOME VARIETIES OF SOFT & FRESH CHEESES INTO CANADA

	Kilograms								
Variety	1992	1993	1994	1995	1996	1997	1998	1999	2000
Goat	7,031	9,229	16,389	11,174	44,043	61,047	69,336	83,104	123,293
Feta	676,954	708,571	799,493	765,340	679,530	722,274	588,401	764,188	740,975
Romanello	2,000	7,000	2,000	2,000	-	-	-	-	-
Crotenese	163,105	222,185	164,245	61,526	-	-	54,103	80,634	47,006
Ricotta	12,103	15,256	17,376	12,564	-	-	13,622	8,299	20,296
Romano	414,133	427,362	402,281	514,735	1,562,089	915,829	234,464	278,398	267,579

SOURCES: CANADIAN DAIRY COUNCIL & STATISTICS CANADA

Fibre Sector

As with all natural fibres, price for mohair remains low, but was somewhat stronger during the past year compared to previous years. Those producers who sell direct to mills or consumers, or have it processed and return to them for cottage industry production, are generating somewhat better returns. Typical prices for mohair through these latter avenues are:

Farm	gate fleeces	kid	$10 - $15 per pound
		adult	$4 - $8 per pound dependent on quality

Processed ready to use $5 per 100 gm.

Mohair sweaters $75 to $450 at craft sales depending on pattern, hand or machine knitted etc.

Service Issues

Issue #1 Ability to produce milk economically

What is the issue:
Feed costs represent 65 percent and higher of total costs of production for most ruminant livestock operations. Dairy goat production is rapidly increasing in size in Ontario. Little, if any work is being done to develop and evaluate feeding programs, that not only improve milk production, but also improve the bottom line, or profit of the operations. Some processors plan to begin payment on milk components rather than volume. Very little Ontario data is available on influence of feeding programs on milk components.

Research inventory/current activities:
None

Gaps/barriers/deficiencies/opportunities:

- Producers, and feed industry personnel interested in dairy goat nutrition, generally are working in isolation in any attempts to fine-tune feeding programs for improved production.

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Research inventory/current activities:
None

Gaps/barriers/deficiencies/opportunities:

- Producers, and feed industry personnel interested in dairy goat nutrition, generally are working in isolation in any attempts to fine-tune feeding programs for improved production.

- Individual producers cannot afford to bear full cost of experimentally changing feeding program in an effort to determine optimum feeding level/ cost for most economical returns.
- Compilation of nutrition research results that may be applicable to Ontario conditions is needed.
- Co-ordinated on-farm feeding trials, based on forage quality and different energy/protein levels, to determine optimum production and cost per litre of production would benefit producers, and feed industry in developing effective feeding programs.

Issue: #2 Management of abortion agents – particularly enzootic and Q-fever

What is the issue:

Abortion problems continue to affect a large number of goat herds, resulting in lost revenue through decreased milk production per doe, reduced kidding percentages, and increased cull rates. Two abortion agents of particular importance, are enzootic abortion and coxiella (Q-fever) abortion. Both of these are zoonotic, and can pose serious human health concerns. Currently, there are no vaccines available to use to prevent outbreaks of enzootic abortion. Research is needed to evaluate efficacy of vaccines currently available for other ruminants, to develop effective vaccines for use in goats, and explore effectiveness of other preventative measures.

Research inventory/current activities:

Gaps/barriers/deficiencies/opportunities:

- No enzootic abortion vaccine is available for use in goats
- Efficacy of vaccines for other ruminants is not known

Issue #3 Benchmarks for economics of production

What is the issue:

Few goat producers participate in data collection programs such as OFMAP (Ontario Farm Management Analysis Program). As the industry expands, financial lending institutions seek reliable financial benchmark data for risk assessment of loan requests. Without these data, they are often reluctant to loan money for establishment of new enterprises, or expansion of existing ones. Producers have no data to compare their own performance to (except their own from previous years) in identifying those areas of the enterprise that need improvements to remain as profitable as possible.

Research inventory/current activities:

Gaps/barriers/deficiencies/opportunities:

- Current benchmarks are based on estimates not actual data
- Participation by producers has been poor in the past
- Lending institutions request this sort of information regularly, when evaluating loan applications

Issue # 4 Affordably priced genetic improvement

What is the issue:

Dairy goat producers have two genetic (milk recording) programs they can participate in. Both of these are based on a set number of tests per animal per year. The cost per test is the same regardless of animal type, so cost per goat per year is the same as cost per cow per year, resulting in unaffordable cost per litre of production. Very few commercial producers can justify this cost, even though they recognize the benefit these programs offer from a genetic improvement standpoint. Existing programs need to evaluate cost-benefit analysis of reducing number of tests required per lactation, and attracting more producers to participate in these programs.

Research inventory/current activities:

- Investigation of the Practicality and Application of Embryo Transfer Technology For Commercial Goat Production in Ontario

Gaps/barriers/deficiencies/opportunities:

- cost per test, and required frequency of testing make these programs unaffordable to the average commercial producer.
- Very little genetic improvement has been made in average production per goat in Canada in the past 10 years.
- Other major goat milk producing regions of the world have milk recording/ genetic improvement programs based on fewer tests, resulting in more affordable programs, and increased participation. Similar changes to Canadian programs need to be evaluated.

Issue # 5 Safety Net R & D – allocation of funding

What is the issue:

Currently, goats are not represented in allocation of funding for research and development, but must rely on the listed commodities to agree to earmark some of the dollar allocation for goat projects and research. Since the goat industry is one of the few livestock commodities that is showing strong economic growth, being listed as one of the regular commodities that receive funding would ensure much needed research could be partially funded from this source.

Research inventory/current activities:

Gaps/barriers/deficiencies/opportunities:

Issue # 6 National Identification and On- farm food safety program

What is the issue:

The two goat organizations in Ontario recognize the importance of National Identification and Canadian On-farm food safety programs in maintaining consumer confidence and, access to markets outside the country. Neither can participate in the manner they wish, because of lack of funding. Both organizations have no formal funding source, so rely on their

executive and directors to represent the organizations on a volunteer basis. With no check-off program in place to help provide funding, they have no available dollars to participate in these programs, to ensure components are developed with the interests of the goat industry in mind.

Research inventory/current activities:

Gaps/barriers/deficiencies/opportunities:

- Neither provincial organization has available funding to participate in these important programs
- On a national level, few other regions of the country with producer organizations have any source of funding either

Issue # 7 Environmental Issues- manure and deadstock

What is the issue:
Legislation will have a big impact on general farming practices in the next five years. Many different environmental issues will need to be investigated, as society becomes more sensitive to environmental issues.

Research inventory/current activities:

Gaps/barriers/deficiencies/opportunities:

- Livestock producers need research performed so that the impact of livestock agriculture on the environment can be based on scientifically derived information.

- Goat producers in particular need specific methodology and information so that manure and deadstock are handled in the most environmentally friendly manner. Manure needs to be analyzed to determine appropriate application rates and whether changes such as nutrition will alter the manure nutrient content to make it more environmentally friendly.
- Deadstock disposal is an issue because of risk to water sheds and control of canine predators.
- Methodology for deadstock disposal is needed that will protect the environment and ensure that disease is not spread.
- It is hoped that much of the work with disposal of sheep carcasses can be applied equally in the goat industry

Services

Services available to the goat industry are limited when compared to those available to other livestock commodities. Those services currently available to the goat industry include: real time ultrasound pregnancy scanning, laboratory diagnostics, veterinary services, nutritional services and provincially inspected slaughter.

Threats

Increased restrictions from rendering industry are affecting custom freezer trade. Smaller, rural abattoirs are refusing to kill sheep & goats because of difficulty with offal disposal from sheep, goats and deer.

With the move to more cost recovery by the Animal Health Diagnostic Labs, producers are discouraged from utilizing available services. This is detrimental to solving flock health problems. There is also concern that with reduced levels of use of lab services by producers, the effectiveness of using diagnostic results in early detection of diseases for surveillance programs is also reduced.

Goat industry association regulations with respect to animal registrations impede uptake of available technologies. Currently offspring born from breedings using on-farm collected semen currently cannot be registered.

Weaknesses

Because of the relatively small size of the goat industry, resources to finance identified needs is very limited. None of the goat industry producer associations have a regular source of revenue, relying on membership fees and volunteers to run their organizations.

Few producers use the current milk recording program, stating that it is very costly. The result is a limited ability to identify those animals with "superior" genetics for higher milk production, and extremely slow genetic progress for such economically important traits. Currently, there is no genetic program for meat goat improvement.

With limited coverage in vet courses on goat health and herd management areas, few graduating veterinarians have any background or experience in goat health management. There is a need for post-graduate training courses to enable veterinarians with goat producer clients to upgrade their knowledge and skills.

Opportunities

Opportunities for providing services to the goat industry are endless. The industry has been under-serviced in many areas that other livestock commodities take for granted such as those services offered by nutritionists, veterinarians, genetic / AI companies etc.

Pork

Pork Subcommittee

Executive Summary

This report summarises the activities of the Ontario Pork Research and Services Committee for 2001. This year the committee was asked to focus discussions on Services. Important existing or emerging service issues were identified.

A research priority identified in our last report (Goal 1.4), which requires, in our view, urgent attention is that of human health in relation to agricultural working environments such as confinement animal housing.

Ontario has a viable and competitive industry. Support of research and services at an effective level is critical to maintain our position in the marketplace. Technology transfer and interaction amongst producers and between all sectors of the industry, including researchers, continues to be extremely important to support a sustainable pork industry in Ontario.

Committee Activities

The Committee met on 20th September 2001 in the Life Learning Centre, OVC, University of Guelph. The main areas identified where research is needed to move the Industry forward remain the environment, pork quality and safety and production competitiveness.

The Committee is made up of a cross-section of the pork industry including researchers, information service, producers, feed, packing, genetic/breeding and building industries. Discussions centred on the many positive activities and strengths as well as challenges for the Pork Industry in Ontario.

State of the Industry

Pork production cannot be overlooked as a significant contributor to economic activity in Ontario, with over 4.1 million hogs marketed in 2000 (see Tables 1 and 2). Of these, over 900 000 were marketed outside of Ontario.

Table 1. The Ontario Swine Production Industry.

	1996	1997	1998	1999	2000	2001
Pigs on Ontario farms[1]						
Sows and bred gilts	323 600	320 600	340 100	335 200	325 800	343 500
Pigs < 20 kg	920 000	974 200	1 115 300	1 083 200	968 500	856 600
Pigs > 20 kg	1 796 800	1 824 600	1 958 500	1 968 900	1 945 000	1 768 000
Boars 6 mo. & over	17 300	15 700	15 300	13 900	12 500	13 10
Producers[2]	6 780	6 068	5 502	5 099	4 473	
Total sales[2] (including sows & boars)	3 711 715	3 822 136	4 380 922	4 644 884	4 145 788	

1. On October 1st. Source: OMAFRA Statistics; Statistics Canada.
2. Source: Ontario Pork.

Table 2. Swine Production in Ontario

	Jan To Aug 1999	Jan To Aug 2000	Jan To Aug 2001
Total market hog sales[1]	3 023 466	2 960 650	3 496 247
Sales out-of-province[1]	603 787	598 041	637 795
Feeder pigs leaving Ont.[2]	308 272	428 960	810 298

1. Source: Ontario Pork.
2. Source: Statistics Canada.

Pork and feeder pig exports are increasing. In terms of land base, feed production, and market prospects, Ontario has capacity for expansion of hog production. It is expected that pork production in Ontario will show a moderate increasing trend over the coming years. The available statistics on sow numbers and hog production suggest that the productivity of Ontario sows has improved by 30% over the last decade. This improvement reflects advances in management, genetics, housing, health, and production efficiency, which have been made through efforts in research and technology transfer.

The Canadian Quality Assurance (CQA) program is being implemented, with 1 858 Ontario producers reported to be recognised as Canadian Quality Assured, accounting for

annual sales of 2.9 million hogs. More producers are enrolled in the program but have not yet completed the process.

Service Issues Facing The Ontario Pork Industry

Our discussion of services began with the questions: What becomes of our services recommendations and priorities? Who has responsibility and accountability? It was decided to take these questions forward for discussion at the OARSC meeting.

There were many service needs identified. The following summarises the priority issues identified by the committee.

OMAFRA is a "service"

It was noted that the very existence of the Ministry is a service to the industry, and gives the industry strength and focus. It has a greater role in supporting the agriculture industry than most people might recognise, and is suggested that the public of Ontario, and the Government, needs to be informed that the agriculture industry needs OMAFRA.

Some members of the committee felt that OMAFRA should take a stronger role in countering mistruths about agriculture and farming published in the media. In the media, sensationalist points of view can obscure scientific research or commentary. Generally, there is a need for long-term education of the public as well as journalists about agriculture and farming. We discussed whether OMAFRA should have a role in this education, and be more proactive in helping to improve the public perception of farming and modern agricultural practice. The importance to the industry of OMAFRA forming policy to guide production practices based on sound scientific advice rather than pressure from vocal special interest groups, emotional public opinion, or other political pressures was noted.

Diagnostic labs and disease surveillance - readiness to respond

The increasing dependency of Ontario's industry on exports makes the industry vulnerable to any event that would affect cross-border trade. Our diagnostic labs and surveillance network are critical. There is a need for strategic plans in case of a disease outbreak (e.g. regionalisation). There is also a need for contingency plans. One area of concern, for example, is the handling of large numbers of young pigs if US border closes to Canadian live pig exports. To support these activities, there is also a need for estimation of the economic cost to the country and the province if there were a foreign animal disease outbreak.

Deadstock issues

There is a need for guidance for producers on appropriate practice in deadstock handling considering the changes in renderers' collection policies and the standards that may arise from the proposed Nutrient Management Act. This may also require research into the fate of drugs or pathogens in buried or composted deadstock to inform policy and best practices.

"Sharps" and other hazardous waste disposal

Used needles and leftover drugs, especially antibiotics, need to be disposed of properly. There is a need for information and possibly support programs to ensure that these items are handled properly on the farm.

Poultry

Poultry Subcommittee

Executive Summary

The three poultry subcommittees met as one group for a full day meeting on September 27th, 2001 at the Kay House, Arkell. The poultry committee discussed the new four year rotation of the development of reports and decided that as the services provided for each of the three sectors were similar, it would submit one report after a general meeting and discussion.

Therefore the following service priorities represent the consensus of the three poultry subcommittees, Broilers, Egg Layers and Turkey and are respectfully submitted by the three chairs: Dr. Rachel Ouckama, Dr. Peter Hunton and Diane Spratt.

Service Priorities for the OARSC Poultry Subcommittees

#1 Priority: Development of Benchmarking capabilities focused on Food Safety.

Discussion began with the lack of research projects in poultry with a specific focus on food safety. Very little is centered on live bird, but on the final meat/egg product.

As a group it was agreed that scientific risk assessments are needed for the entire industry coupled with verification data to determine the impact of enhanced control measures through HACCP programs. This would enable the development of cost/benefit analysis and provide a level of proof of the benefits of HACCP , particularly at the farm level.

It was stated that the industry needs a provincial survey/baseline to provide a current benchmark. In order to monitor changes and provide verification regarding the critical control points, there is a need to develop a continuous data bank where members of the industry (producers/ boards/processing companies/hatcheries/private veterinarians / diagnostic laboratories) can send their confidential information to a unbiased 3rd party in order to update province wide benchmark information. Data should be collected from participants on a monthly basis and reports generated quarterly on an ongoing basis. All data should be reported as a province with regional and seasonal information but no identifying information which would compromise the confidentiality of the data submitted.

Such a compilation of field data offers huge opportunities for trend analysis and epidemiological follow-up. Downloading specific data sets to subgroups of researchers, OMAFRA or industry analysts would allow a wide range of investigations, for example:

a. the epidemiology of specific disease occurrences
b. the e pidemiology of condemnation trends
c. the effect of management trends and prevention programs on the health and performance of the Ontario flock

d. the effect of new quality assurance and HACCP programs on contamination rates and overall flock health (and ultimately on consumer health and complaints)
e. the economic and market factors affecting industry structure and global competitiveness.
f. tracking certain disease occurrence in order to meet specific countries' export requirements for fresh and frozen product
g. tra cking antibiotic/ drug usage and trends in antimicrobial resistance.

It was agreed that this would be of tremendous value and that it would have to be first developed as a pilot project on a small scale with buy-in developed with each of the participating groups.

Service Priority # 2: Poultry Health, Diagnostics & Disease Surveillance

The AHL needs provincial status and funding in order to maintain and co-ordinate diagnostic services with improved response time, disease surveillance and disease response mechanisms.

The three main areas of disease control discussed were:

a) Diagnostics
b) Surveillance
c) Response

A. Diagnostics:

Timely rapid accurate agent identification is vital as the first step in adjusting or redesigning present prevention/ treatment regimes, in responding appropriately and rapidly to emerging problems and in developing new control procedures. The poultry industry depends heavily on the services, specialized expertise and the technical/ educational extension from the poultry team at AHL. Comments were recorded that some regional needs are not being addressed, particularly eastern Ontario. It was agreed that continued and increased support and funding of the poultry section of the Animal Health Lab at U of G is essential to improve infrastructure, maintain timely response and at very least current diagnostic service and maintain expertise level of personnel.

AHL is now ISO accredited and can validate tests (eg. Bronchitis). The dollars and personnel must be maintained as the lab can now offer testing which was previously sent to the U.S. The ISO 9002 is an important criterion to ensure highest quality and accuracy and should allow certification for export purposes but it does limit options for subcontracting tests, as the protocols of the other labs must meet equivalent audited standards. Exportation of samples to the US for testing is increasingly difficult and may no longer be a viable option. To maintain the health and productivity of the Ontario Poultry Industry expanded diagnostic services at AHL will likely be necessary.

Success story: Sentinel bird program is a pilot program coordinated with the province and the industry. The industry response has been very positive as this research pilot has

provided improved monitoring methods and better testing options. This program needs to be maintained.

B. Surveillance:

The Poultry Industry expects OMAFRA to play a major role in providing Provincial Disease-tracking capabilities and to provide extension services to the industry. Since the AHL sees only a small proportion of disease incidents, the industry representatives stressed the need for a central data collection point where diagnostic labs and veterinarians could report disease diagnosis. This data system should serve as an information centre for disease trends or outbreaks of contagious diseases, dovetailing with current improvements such as identifying the location of every livestock and poultry farm within the Global Positioning System and integrating that with a Global Information system.

If the disease data collection system is coordinated with the Provincial Benchmarking System as discussed in section #1 then potentially other members of the industry (farmers/ poultry processors/ hatcheries/ feed mills/ sales service reps) could report disease/ mortality occurrences and the use of antibiotics, other medications and vaccines. This data system would be of major assistance in tracking the use of drugs, incidence of disease and the actual effectiveness of commodity based HACCP programs.

The Ontario poultry industry supports the Livestock Medicine Certification Programs and specifically the Poultry course as a step forward in ensuring responsible use of antibiotics.

C. Disease Response Mechanism.

There is a need for a more formal disease response mechanism within the poultry industry with regards to any communicable disease (eg. ILT) or emerging food safety concern. Formation of a response "team" representing OMAFRA, veterinary and industry sectors would allow for development of pre-planned reaction and " what-if" scenarios enabling well coordinated contingency planning in the case of an outbreak or new food safety concern.

There is a serious need for industry consultation and industry input for a "Health of Animals Act for Ontario" which would give authority to improve communication plans and allow the development of a more professional, coordinated response for any disease that impact on export or pose a major economic threat.

There is industry support of current development of GPS/GIS systems mapping industry locations and shipping routes. These should be linked with and become an integral part of the disease response mechanism and plans.

Service Priority # 3 - Nutrient Management and Planning

The Ontario poultry subcommittees recommend increased funding and personnel to ensure that OMAFRA engineers remain the 3rd party reviewers for NMP's.

Emerging issue: concerns regarding data currently being utilized in NMAN software. It was stated that phosphorus outputs should be used instead of animal units as it was considered that animal units are redundant. The Ontario Egg Producers and the Hatching Egg and Chick Commission have both embarked on a survey and sampling protocol to establish benchmark data for manure analysis and volume production in the province.

Sheep

Sheep Subcommittee

Executive Summary

The sheep industry is in an exciting period of growth and opportunity. The sheep industry is in the unique position of not being able to supply the market demand available in Ontario and has been in this situation for several years. In the last 10 years, there has been increased investment in the industry and the benefits of that investment are starting to become apparent.

It will be a challenge for this small industry to overcome the barriers now facing agricultural livestock industries in the form of environmental, food safety and declining infrastructure in order to realize the industry's substantial potential. The industry's ability to overcome these barriers during the next four years will significantly impact the future of the sheep industry.

Industry/Sector Scan

Sheep & Lamb Inventory – Canada

Statistics Canada reports yet another increase in sheep and lamb numbers as of July 1, 2001. Although, this is the fourth consecutive year that the Canadian flock has shown an increase, the rate of increase is lower than that seen last year. This is the first time since 1966 that the national flock has exceeded one million head.

The estimated total inventory of sheep and lambs at July 1, 2001 was 1.04 million head, up 6.4 percent from July 1, 2000's estimate of 978.5 thousand head. Canada's flock consists of 523.3 thousand breeding ewes, 26.7 thousand breeding rams, 134.6 thousand replacement lambs and 356.7 thousand market lambs. British Columbia, Saskatchewan and Quebec show the greatest increases in their provincial flocks over last year (20.7, 17.2 and 14.4 percent respectively). With the exception of Newfoundland and Quebec, all provinces in Eastern Canada showed declines in total sheep and lamb numbers.

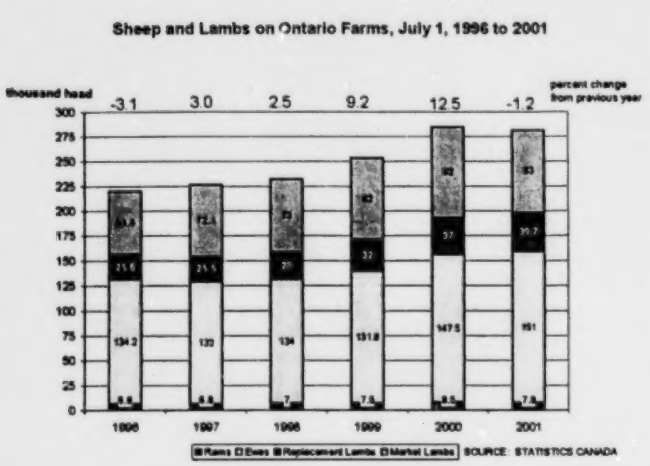
Sheep & Lambs on Farms, by Province, July 1, 2001 (thousands of head)

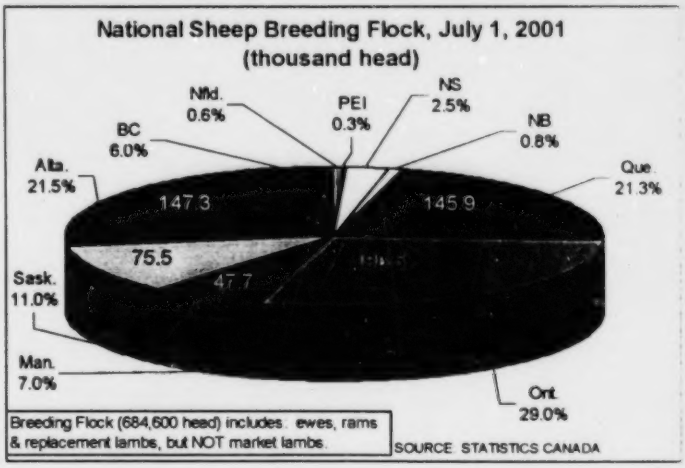
	Nfld.	PEI	NS	NB	Que.	Ont.	EAST	Man	Sask.	Alta	BC	WEST	Canada	*01/00 %*
Rams	0.2	0.1	0.7	0.2	4.4	7.8	13.4	1.5	3.5	6.0	2.3	13.3	26.7	**1.52**
Ewes	3.5	1.6	13.2	4.5	117.0	151.0	290.8	33.8	54.0	113.2	31.5	232.5	523.3	**6.06**
Replacement lambs	0.6	0.3	2.9	0.9	24.5	39.7	68.9	12.4	18.0	28.1	7.2	65.7	134.6	**9.7**
Market lambs	2.9	1.7	11.3	3.5	60.0	83.0	162.4	31.1	47.2	87.0	29.0	194.3	356.7	**6.13**
Total	7.2	3.7	28.1	9.1	205.9	281.5	535.5	78.8	122.7	234.3	70.0	505.8	1041.3	**6.42**
01/00 % change	**9.1**	**-9.8**	**-1.1**	**-2.2**	**14.4**	**-1.2**	**4.3**	**0**	**17.2**	**4.8**	**20.7**	**8.8**	**6.42**	

SOURCE: STATISTICS CANADA

The July 1st inventory indicates Ontario's total flock size has decreased by 1.2 percent to 281.5 thousand head compared to July 2000 flock size of 285 thousand head. Although the total flock size decreased, Ontario's breeding flock increased by 2.9 percent. Ontario accounts for 29.0 percent of the national breeding flock (198.5 thousand head of ewes, rams and replacement

lambs). Alberta continues to have the second largest breeding flock, with 147.3 thousand head accounting for 21.5 percent of the national flock. Quebec's breeding flock is continuing to show rapid expansion (14.4 percent over July 2000 figures), and accounts for 21.3 percent of the national flock (145.9 thousand head).





Sheep & Lamb Inventory – United States

The sheep flock in the United States continues to decrease in size, although the decline has slowed compared to previous years. According to the USDA July 1, 2001 sheep inventory report, there were 8.30 million head of sheep in the United States on July 1st, 2 percent below July 1, 2000. The breeding sheep inventory declined to 4.90 million head, 3 percent below July, 2000. Of the July 1st, 2001 breeding flock, 4.07 million head were ewes one-year and older, 195,000 head were rams one year old and older, and 640, 000 head were replacement lambs (including newborn lambs).

According to the July 1st inventory estimates, there were 3.3 million head of market lambs available in the U.S., 2.1 percent fewer than a year ago. The following table compares July, 1998 through July, 2001 U.S. market lamb inventory by weight groups.

	July, 1998	July, 1999	July, 2000	July, 2001	% Change 01/00
	-- 1,000 Head --				
Under 65 lbs.	2,330	2,120	2,010	1,950	**-3.0**
65 – 84 lbs.	720	730	710	700	**-1.4**
85 – 105 lbs.	420	465	400	400	**0**
Over 105 lbs.	270	260	280	280	**0**
Total	3,740	3,575	3,400	3,330	**-2.1**

SOURCE: USDA

The 2001 U.S. lamb crop is estimated at 4.42 million head, down 4 percent from the 2000 lamb crop of 4.62 million head. Lambs born during January through June, 2001 totaled 3.94 million head, or 89 percent of the yearly total. An additional 480,000 head are expected to be born during the period July through December, 2001.

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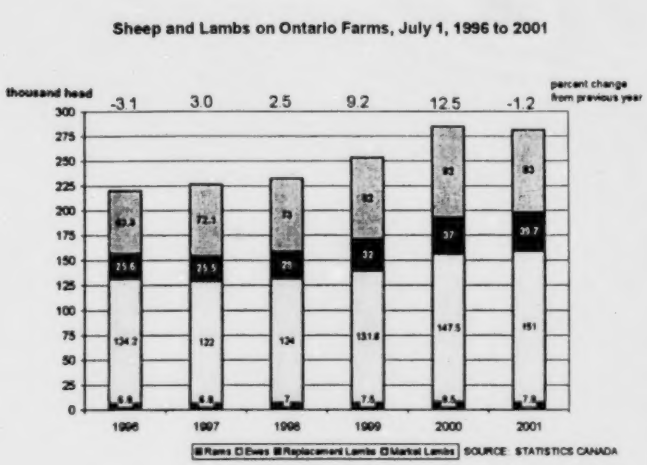

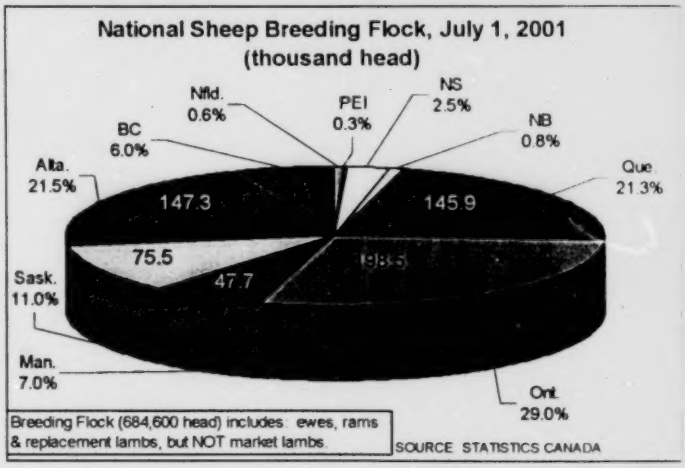

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Market Prices - Ontario

Average prices received for 80 to 94 pound lambs in 2000 began strengthening in May and June to surpass prices received during 1999 by producers in Ontario. Yearly average prices were 7.0 percent higher than those received in 1999. Prices during the first six months of 2001 for 80 to 94 pound lambs remained strong, and higher than during the same period in 2000. Prices for other categories of lambs showed similar trends over the 2000 year and during the first six months of 2001. Although, the price for cull ewes remained fairly constant during 2000, compared to 1999, it has softened slightly during the first six months of 2001. The following table compares prices received for lambs weighing 80 to 94 pounds over the past 5 years in Ontario, Quebec, Alberta and the United States.

Yearly Average Prices for 80 to 94 lb. Lambs				
	Ontario $/cwt	Quebec $/cwt	Alberta $/cwt	U.S. $ US/cwt
2000	132.83	131.26	100.43	79.88
1999	124.13	122.62	94.88	74.93
1998	132.10	129.49	99.34	79.59
1997	140.06	136.63	124.28	81.32
1996	135.11	122.98	112.55	85.44
5 yr.	132.85	128.60	106.30	80.23

SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA

The following table provides a summary of 2000 lamb and ewe marketings from St. Hyacinthe, Quebec and 13 markets in Ontario, indicating volume of lambs and average price for various categories. Data from 1999 is provided for comparison purposes.

Summary of Lambs Marketed in Ontario & Quebec, 1999-2000								
	2000 (Ontario – 13 markets) 1999				2000 (Quebec – St. Hyacinthe) 1999			
	# sold	$/ cwt	# sold	$/ cwt	# sold	$/cwt	# sold	$/cwt
Lambs-79lbs	68,427	155.86	64,256	153.84	12,205	140.96	11,166	137.00
80 – 94 lbs	24,944	132.83	22,588	124.13	5,131	131.26	4,092	122.62
95 – 109 lbs	12,231	125.83	9,525	113.73	3,052	127.16	1,955	117.99
+ 110 lbs	3,541	105.27	4,292	100.69	361	132.77	618	117.33
Newcrop	8,821	159.32	9,442	180.84	23,137	167.18	21,471	176.39
Sheep	26,414	63.93	22,995	60.96	7,579	57.71	7,865	58.82
Total	144,378	-	133,098	-	51,465	-	47,167	-

SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA

The Forward Contract Project, coordinated by the Ontario Sheep Marketing Agency, is in its fourth year. To June, 2001, there have been 16,178 lambs sold (3,080 in the first 6 months of 2001) on the project with the following statistics: average carcass weight of 49.1 pounds, average fat tissue depth of 13.1 mm, average index score of 97.7 and average carcass price of $146.55. For more information on the Forward Contracting project, contact the Ontario Sheep Marketing Agency.

Market Prices - Ontario

Average prices received for 80 to 94 pound lambs in 2000 began strengthening in May and June to surpass prices received during 1999 by producers in Ontario. Yearly average prices were 7.0 percent higher than those received in 1999. Prices during the first six months of 2001 for 80 to 94 pound lambs remained strong, and higher than during the same period in 2000. Prices for other categories of lambs showed similar trends over the 2000 year and during the first six months of 2001. Although, the price for cull ewes remained fairly constant during 2000, compared to 1999, it has softened slightly during the first six months of 2001. The following table compares prices received for lambs weighing 80 to 94 pounds over the past 5 years in Ontario, Quebec, Alberta and the United States.

Yearly Average Prices for 80 to 94 lb. Lambs				
	Ontario $/cwt	Quebec $/cwt	Alberta $/cwt	U.S. $ US/cwt
2000	132.83	131.26	100.43	79.88
1999	124.13	122.62	94.88	74.93
1998	132.10	129.49	99.34	79.59
1997	140.06	136.63	124.28	81.32
1996	135.11	122.98	112.55	85.44
5 yr.	132.85	128.60	106.30	80.23

SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA

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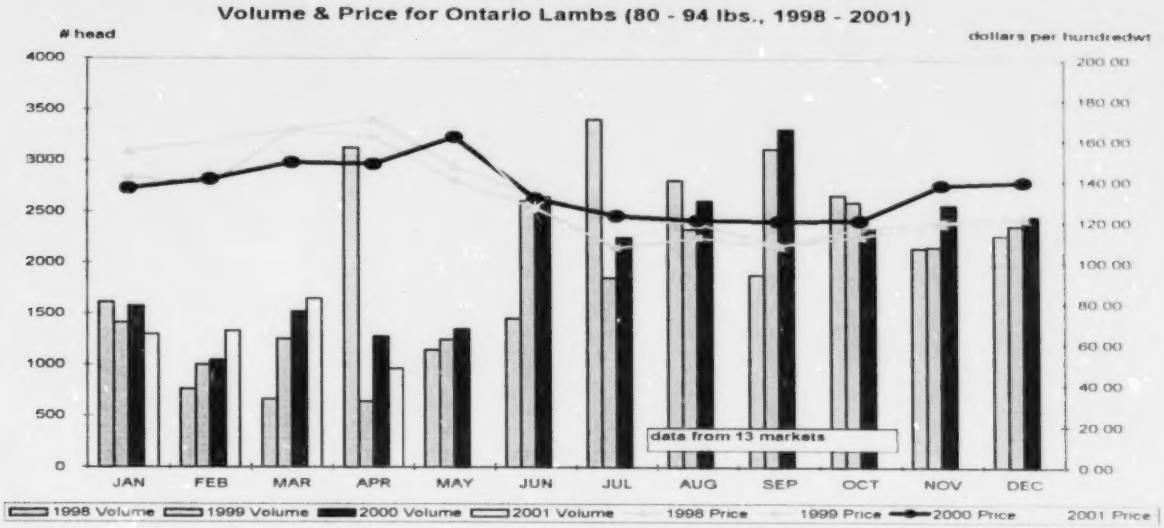


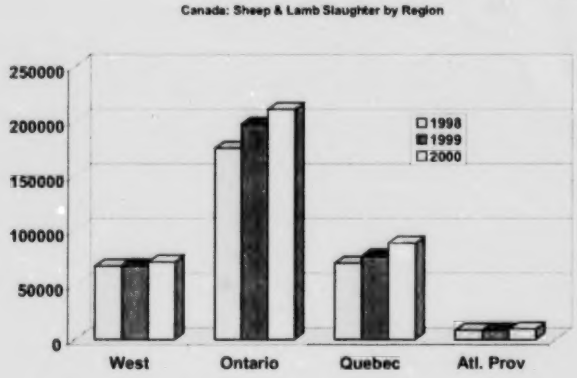
SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA

Market Prices – United States

Lamb prices remained relatively stable during the first 5 months of 2001, but started a rapid decline beginning in June and had not recovered as of late September. July's price for choice slaughter lambs, at $US69.82per hundredweight, is $14.34 lower than the same month last year. September's price of $US51.25 per hundredweight is the lowest for any month since 1994. In July, feeder lambs (70 to 90 pounds) were selling $13.83 (15%) lower than a year ago, at $81.29. Prices for feeders has fallen to $US68.50 for September.

Slaughter – Canada

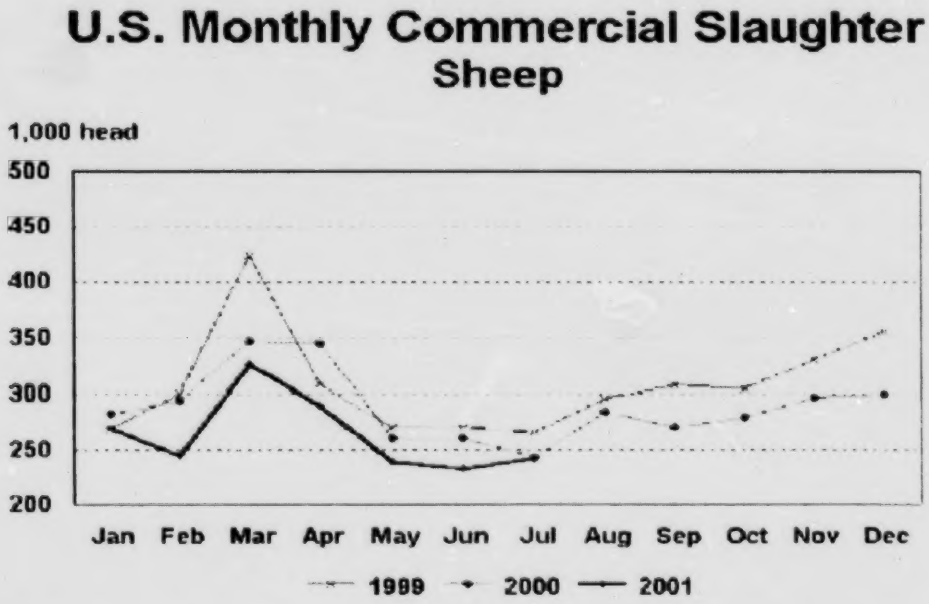
All regions of Canada showed increased slaughter of sheep and lambs during 2000. Total preliminary national slaughter (federal and provincial inspected plants) rose to 378,598 head, an increase of 8.6 percent over 1999's slaughter of 348,714 head. For the third consecutive year, Ontario and Quebec posted increased slaughter levels(7.0 and 15.3 percent respectively, over 1999 slaughter levels). Ontario continues to have the largest combined slaughter, accounting for 55.6 percent of all sheep and lambs slaughtered in Canada, while Quebec makes up 23.2 percent, the western provinces 18.7 percent and the Atlantic provinces only 2.5 percent. Slaughter in the western provinces continues to recover from the decline in 1998, and shows a strong increase of 5.1 percent over 1999, to 70,771 head.



SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA

Slaughter – United States

United States slaughter estimates for the first half of 2001 continue the downward spiral that has been occurring for the past seven years. Slaughter to July 1st was 1.6 million head, down a staggering 10 percent compared to the same period last year. Live weight of U.S. lambs being marketed continues to climb, and was 141 pounds compared to 133 pounds during the first half of 2000. Corresponding carcass weights have climbed to 72 pounds, up from 69 pounds a year ago. One US market report raises questions about the quality of the product based on the average dressed weights. From June through August, between 4 and 6 percent of the lamb was yield grade 5 compared to the long run average of 1.2 percent. Recent mandatory price reporting data suggests yield grade 5 carcasses trade at prices between 40 and 70 (mostly 48 to 52) percent below yield grade 1 to 4 carcasses. The report concluded that some of the pressure on live prices reported in a previous section, is coming from decreased desire from retail and consumer buyers for the increased fat cover.



SOURCE: USDA

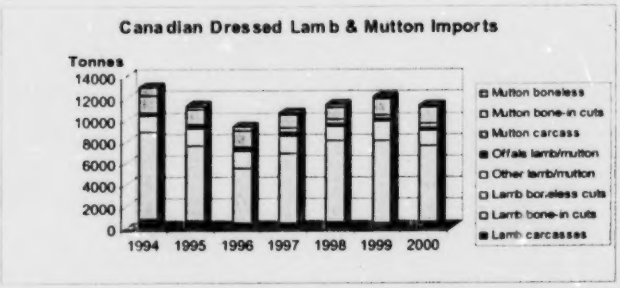
Imports into Canada - Dressed Meats

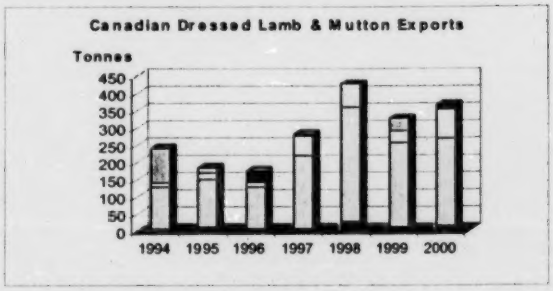
Imports of lamb and mutton into Canada, decreased by 6.5 percent in 2000, totaling 11,369 tonnes. Australia remains as our major supplier of mutton, while New Zealand supplies the majority of lamb imported. During 2000, imports of mutton cuts, bone-in increased for the third year in a row, showing a 3.1 percent increase (1,491 tonnes) over 1999's figures of 1, 441 tonnes. Imports of mutton carcasses recovered from the low levels seen the last two years, increasing by 45 percent, to 410 tonnes, up from 283 metric tonnes in 1999.

Dressed lamb imports declined by 9.3 percent (9,238 tonnes) in 2000 compared to 1999 (10,185 tonnes). New Zealand remains Canada's number one supplier of imported lamb, accounting for 71.2 percent (6,578 tonnes) of dressed lamb imports in 2000. Lamb cuts with bone-in account for the largest portion of dressed lamb imports at 7,028 tonnes, although lamb carcasses showed the largest increase of 11 percent over 1999, at 581 tonnes.

Exports from Canada - Dressed Meats

Exports of mutton and lamb in 2000, recovered somewhat from the slowdown experienced n 1999. Exports of 367 tonnes in 2000, is a 12.2 percent increase over exports in 1999. Exports to the United States account for 83 percent of all exported dressed mutton and lamb, and have risen by 22.5 percent over 1999's figures of 249 tonnes. Most Canadian dressed lamb is exported as cuts with bone-in, representing 69.8 percent of 2000's export volume at 256 metric tonnes.





SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA

LAMB & MUTTON	DRESSED MEAT EXPORTS (tonnes)						DRESSED MEAT IMPORTS (tonnes)						
	1995	1996	1997	1998	1999	2000	1995	1996	1997	1998	1999	2000	
Lamb carcasses	13	6	7	29	12	14	679	451	471	537	523	581	Lamb carcasses
Lamb bone-in cuts	138	123	211	331	245	256	6,890	5,077	6,443	7,549	7,592	7,028	Lamb bone-in cuts
Lamb boneless cuts	16	12	56	67	33	82	1,591	1,619	1,568	1,249	1,774	1,382	Lamb boneless cuts
Other lamb/mutton	0	0	1	0	1	0	0	0	7	62	59	0	Other lamb/mutton
Offals lamb/mutton	0	35	6	0	0	7	384	335	368	275	237	247	Offals lamb/mutton
Mutton carcass	0	0	0	0	0	0	0	0	472	365	283	410	Mutton carcass
Mutton bone-in cuts	17	0	0	0	36	8	1,387	1,502	1,165	1,170	1,441	1,491	Mutton bone-in cuts
Mutton boneless	0	0	0	0	0	0	373	354	165	269	253	230	Mutton boneless
TOTAL LAMB & MUTTON	184	176	281	427	327	367	11,304	9,338	10,669	11,476	12,162	11,369	TOTAL

SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA

Dressed Imports into United States

Despite the attempt by the United States to impose higher duties on imported lamb for the three-year period ending in 2002, Australia and New Zealand continue to supply increasing levels of lamb into the US market, compared to 1999. In July 1999, the United States imposed a 3-year tariff- rate quota (TRQ) on lamb meat imports. Lamb meat from Canada and Mexico was excluded from the import restrictions. A panel from the World Trade Organization (WTO) recommended, in December 2000, that the United States bring its import safeguard measures on lamb meat (the TRQ) into conformity with its WTO obligations, as a result of a complaint filed

by New Zealand and Australia in October 1999. The United States appealed the ruling but lost the appeal. The United States has settled the WTO dispute with Australia and New Zealand and will end its TRQ safeguard on November 15, 2001. Imports of lamb into the United States during 2000 were 13.9 percent higher than in 1999, at 94,564 thousand pounds. During the first six months of 2001, imports of lamb to the United States rose by 18 percent over the same period in 2000.

Comparison of Lamb Imports into United States					
		Carcass weight., thousand lbs			
	1998	1999	2000	Jan-June 2000	Jan-June 2001
Australia	42,438	48,587	57,884	27,741	34,219
New Zealand	34,799	33,991	35,227	19,318	21,574
Total	77,813	83,052	94,564	47,837	56,467

SOURCE: USDA ECONOMICS & STATISTICS

Imports of Live Sheep & Lambs from United States

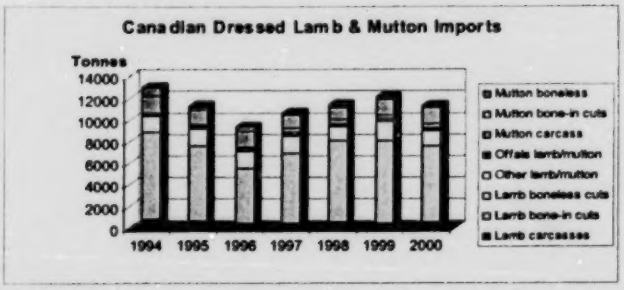
Imports of all sheep and lambs from United States totaled 2,802 head for 2000, a decrease of 69.7 percent compared to 1999. According to Red Meat Division of Agriculture and Agri-Food Canada, there were no imports of slaughter sheep and lambs during 2000 from United States, compared to 2,444 head, in 1999.

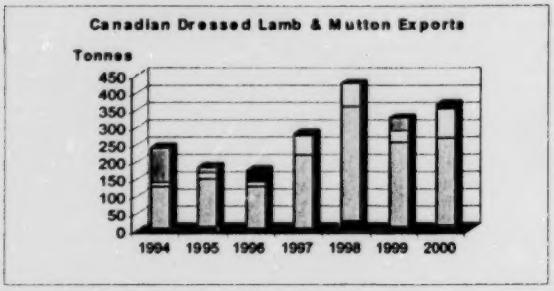
Exports of Live Sheep & Lambs to United States

Exports of all sheep and lambs to the United States totaled 51, 523 head for 2000, virtually unchanged from 1999's exports of 51,960 head. Slaughter lambs continue to account for the majority of these, with 48,399 head exported during 2000. With the exception of a small group originating from Ontario, all of these lambs originated in western Canada.

The majority of 2000's export lambs were from Manitoba (24,005), Saskatchewan (2,609), and Alberta (21,903).

SLAUGHTER SHEEP & LAMBS EXPORTED TO THE UNITED STATES - 2000											
Province Of Origin	B.C.	ALBERTA	SASK. 10 %	MAN. 90 %	TOTAL	ONT.	ATL.	CANADA			
Border Crossing	WASH	MONTANA	NORTH DAKOTA			N.Y.	MAINE	2000	1999	1998	1997
Slaughter Lambs	701	20,206	2,576	23,707	26,283	749	460	48,399	48,239	11,996	18,006
Slaughter	0	0	0	0	0	0	0	0	1,685	0	0





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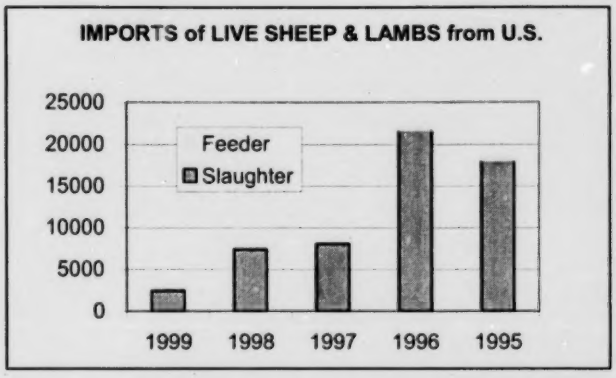
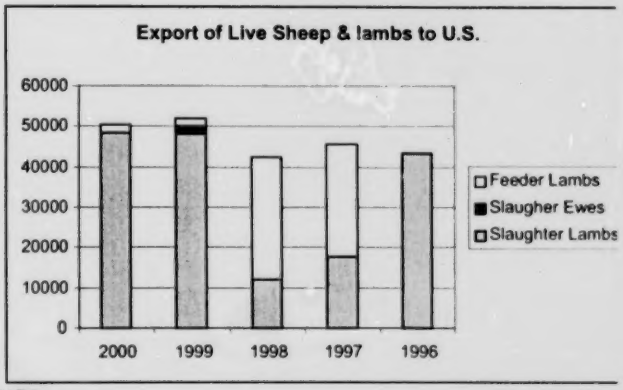
Slaughter	0	0	0	0	0	0	0	0	1,685	0	0

Ewes											
Feeder Lambs	0	1,697	33	298	331	0	39	2,067	1,976	30,405	27,488
Total	701	21,903	2,609	24,005	26,614	749	499	50,466	51,939	42,401	45,494

SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA





SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA

Pelt Market

Pelt prices in the United States continue to remain fairly steady. Number 1 shorn pelts were trading between $8.75 to $112.25 US with unshorn spring lambs trading between $9.50 and $11.50 during the week of October 5, 2001.

Wool Market

Prices that Ontario producers received for their wool during 2000 remained virtually unchanged, with a slight strengthening during mid 2001. Stores of stockpiled wool in Australia are reported as being slowly reduced. There is some anticipation that prices will start to strengthen once these stockpiles are cleared.

Sheep Flock Improvement Program

Enrolment has remained stable with a few less producers testing approximately the same number of lambs. In 2000, 115 producers tested 18,206 lambs representing 8,699 ewes, 9,730 lambings and 24 breeds (including crossbreds). The average number born per lambing was the same as 1999 at 1.9 and the average number weaned per lambing increased from 1.6 to 1.7. There was an increase in the average number of ewes and lambs per producer, again showing the trend toward larger average flock size in the industry.

Growth and terminal indexes have been added to the program. These indexes are genetic evaluation indexes that will make genetic evaluations easier to use and enable producers to select for negatively correlated traits more effectively.

Dairy Sheep Industry in Ontario

Currently have about 20 producers who are selling their milk to processors. Most producers have the ability to freeze the milk after it is cooled, and make a shipment when volume makes it worthwhile. It is estimated that approximately 120,000 liters of sheep milk was used for cheese production in Ontario during 1999 based on an informal survey of members of the provincial association.

The Ontario Dairy Sheep Association hosted the 6th Annual Great Lakes Dairy Sheep Symposium in early November 2000. This is the first time this prestigious event has been held in Canada. Attendance was excellent, as was the program.

During 2000, producers received anywhere from $1.25 to $1.75 per liter for their milk.

Imports of Sheep Milk Cheeses

The cheeses listed in the table below are "types" of cheeses that traditionally are made from sheep milk. Data on imported cheeses does not necessarily specify the source of milk (cow, sheep, goat), but reports only by "type". All "roquefort" cheese is made from sheep's milk.

Cheese Imports Into Canada (some Varieties that are typically made from sheeps' milk) In kilograms					
	1996	1997	1998	1999	2000
Fresh- Ricotta	227,405	13,811	13,622	8,299	20,296
Roquefort*	15,892	6,330	9,735	10,485	10,106
Natural -Romano	1,554,413	197,491	219,769	230,336	246,490
Brie	44,017	833,183	829,828	902,971	868,224
Camembert	1,055,587	351,010	414,922	454,502	484,991
Feta	683,000	722,274	588,401	764,188	740,975
Grated - Romano	7,676	19,602	14,695	48,062	21,089

*registered namebrand of a sheep milk cheese in France SOURCE: CANADIAN DAIRY COMMISSION

Purebred Registrations

Total sheep registrations in Canada for 2000 were 16,573 head, down from 18,136 head in 1999. Top five breeds registering the greatest number of sheep in 2000 are: Suffolk, 2,730; Katahdin, 2,615; Dorset, 2,465; Rideau Arcott, 1,234; and Polypay, 1,106 head.

Quebec continues to lead registrations for the Dorset breeds with 1,246 head registered, Polypay with 980 head registered and for the Romanov breed with 517 head registered. Ontario accounted for the highest number of Rideau Arcott registrations at 786 head, as well as for the highest number Suffolk registrations at 761 head. This is the first year that South African Meat Merino registrations exceeded 50 animals.

CANADIAN PUREBRED SHEEP REGISTRATIONS

(BREEDS REGISTERING MORE THAN 50 ANIMALS IN 2000)

BREED	1995	1996	1997	1998*	1999	2000	BREED	1995	1996	1997	1998*	1999	2000
KATAHDIN	0	577	3,106	2,841	2813	2,615	ICELANDIC	59	220	255	53	595	989
ARCOTT (CAN)	113	187	270	277	771	340	LINCOLN	190	129	125	105	173	113
ARCOTT (OUT)	185	100	200	435	435	464	N.C. CHEVIOT	504	465	498	566	635	601
ARCOTT (RID)	609	1,038	895		1,823	1,234	OXFORD DOWN	249	264	237	229	264	192
B. LEICESTER	302	288	284	245	299	298	POLYPAY	711	757	393	917	771	1106
CHAROLLAIS	0	122	91	107	75	196	RAMBOUILLET	355	172	132	157	190	158
CLUN FOREST	118	172	141	150	180	128	ROMANOV	1,267	717	839	1,033	791	662
COLUMBIA	170	122	121	102	171	177	ROMNEY	116	138	161	142	154	167
DORSET	3,444	2,657	2,304	3,058	2628	2,465	SHROPSHIRE	68	96	81	62	65	57
EAST FRIESAN	0	45	56	166	186	283	SOUTHDOWN	342	298	318	316	312	291
FINNSHEEP	146	134	196	183	142	65	SUFFOLK	2,712	2,638	2,556	2,917	3,467	2,730
HAMPSHIRE	710	624	515	666	649	614	TEXEL	153	106	161	165	151	203
JACOB					14	50	S AFRI. MEAT MERINO						57

*Does not include US/Other registrations.

SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA & CANADIAN LIVESTOCK RECORDS

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The cheeses listed in the table below are "types" of cheeses that traditionally are made from sheep milk. Data on imported cheeses does not necessarily specify the source of milk (cow, sheep, goat), but reports only by "type". All "roquefort" cheese is made from sheep's milk.

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Roquefort*	15,892	6,330	9,735	10,485	10,106
Natural -Romano	1,554,413	197,491	219,769	230,336	246,490
Brie	44,017	833,183	829,828	902,971	868,224
Camembert	1,055,587	351,010	414,922	454,502	484,991
Feta	683,000	722,274	588,401	764,188	740,975
Grated - Romano	7,676	19,602	14,695	48,062	21,089

*registered namebrand of a sheep milk cheese in France SOURCE: CANADIAN DAIRY COMMISSION

Purebred Registrations

Total sheep registrations in Canada for 2000 were 16,573 head, down from 18,136 head in 1999. Top five breeds registering the greatest number of sheep in 2000 are: Suffolk, 2,730; Katahdin, 2,615; Dorset, 2,465; Rideau Arcott, 1,234; and Polypay, 1,106 head.

Quebec continues to lead registrations for the Dorset breeds with 1,246 head registered, Polypay with 980 head registered and for the Romanov breed with 517 head registered. Ontario accounted for the highest number of Rideau Arcott registrations at 786 head, as well as for the highest number Suffolk registrations at 761 head. This is the first year that South African Meat Merino registrations exceeded 50 animals.

CANADIAN PUREBRED SHEEP REGISTRATIONS
(BREEDS REGISTERING MORE THAN 50 ANIMALS IN 2000)

BREED	1995	1996	1997	1998*	1999	2000	BREED	1995	1996	1997	1998*	1999	2000
KATAHDIN	0	577	3,106	2,841	2813	2,615	ICELANDIC	59	220	255	53	595	989
ARCOTT (CAN)	113	187	270	277	771	340	LINCOLN	190	129	125	105	173	113
ARCOTT (OUT)	185	100	200	435	435	464	N.C. CHEVIOT	504	465	498	566	635	601
ARCOTT (RID)	609	1,038	895		1,823	1,234	OXFORD DOWN	249	264	237	229	264	192
B. LEICESTER	302	288	284	245	299	298	POLYPAY	711	757	393	917	771	1106
CHAROLLAIS	0	122	91	107	75	196	RAMBOUILLET	355	172	132	157	190	158
CLUN FOREST	118	172	141	150	180	128	ROMANOV	1,267	717	839	1,033	791	662
COLUMBIA	170	122	121	102	171	177	ROMNEY	116	138	161	142	154	167
DORSET	3,444	2,657	2,304	3,058	2628	2,465	SHROPSHIRE	68	96	81	62	65	57
EAST FRIESAN	0	45	56	166	186	283	SOUTHDOWN	342	298	318	316	312	291
FINNSHEEP	146	134	196	183	142	65	SUFFOLK	2,712	2,638	2,556	2,917	3,467	2,730
HAMPSHIRE	710	624	515	666	649	614	TEXEL	153	106	161	165	151	203
JACOB					14	50	S AFRI. MEAT MERINO						57

*Does not include US/Other registrations.
SOURCE: RED MEAT DIVISION, AGRICULTURE & AGRI-FOOD CANADA & CANADIAN LIVESTOCK RECORDS

Service Issues

Issue #1 Market supply – Quantity and Quality

What is the issue:
The existing demand for lamb is higher than the industry's capacity to produce. There is a great opportunity for Ontario sheep producers to increase their market share of the lamb currently consumed by increasing the productivity of existing sheep numbers. Prices have remained good for an extended period of time.

Research inventory/current activities:
Breeding strategies and genetic evaluation for carcass merit of OLIBS lambs
Improvements in reproductive technologies of ET and AI
Development of fresh-semen AI programs
MGA breeding trials
Identification of sheep with extended breeding seasons
Development of a computer model of nutrient use in prolific, heavy milking ewes
Optimization of production/marketing cycles for sheep
Applied aspects of sheep production and marketing
Forage based sheep production and management systems

Gaps/barriers/deficiencies/opportunities:
Producers need good basic production research and information in the areas of nutrition, health, genetics, reproduction, economics and meat quality as the industry moves from small hobby type farms to economic sized operations that produce quality lamb for a year around market. The industry has increased both in total numbers of sheep and in average flock size. A higher percentage of both existing and incoming producers view sheep production as a viable commercial activity rather than life style. To be commercially successful, these producers require high quality and rapid technology transfer and communication of sheep research. This is difficult in an industry that doesn't attract many private consultants where there are many small producers entering the industry on a regular basis that need basic information and technology.

There is a tremendous opportunity with the United States flock size still in decline (currently 5 million ewes down from 10 million ewes in 1990) and the industry still only supplying about 50% of the lamb currently consumed here in Ontario.

Issue: #2 Declining and nonexistent infrastructure

What is the issue:
The sheep industry is facing a constantly increasing barrier to developing the infrastructure necessary to create a major industry, as the survival of existing infrastructures is threatened from government cutbacks.

Research inventory/current activities:
Genetic evaluation research has recently reached an agreement with Quebec to share and coordinate genetic evaluation research. This ensures that the best use of resources from both provinces is made.

Gaps/barriers/deficiencies/opportunities:
As the federal and provincial governments reduce and in some cases eliminate research, extension and other agricultural services, businesses and private support programs with sheep expertise are not available to breach the gaps that are created. This continues to erode the basic technology and expertise available to the sheep industry.
The national producer organization is not strong or well funded.
There is declining slaughter capacity as most sheep are slaughtered in small provincial plants. These older and less efficient plants cannot meet the changing slaughter regulations with the result that many are no longer killing sheep.
There are no funds for graduate student stipends, so critical in attracting and keeping graduate students with an interest in sheep research. These people are being lost to research with other commodities or to research altogether.
There is no longer a national genetic evaluation database for sheep. A comprehensive national database has not been kept since 1998. This will fragment the genetic information on breeding stock across the country and possibly slow the speed of genetic improvement.

Issue #3 Food Safety and Health Issues

What is the issue:
The creation of quality assurance and national identification programs has become important to ensure market access in the future. The industry must make sure that these things are in place so that opportunities can be recognised and utilised in the future. There will be many issues as a result of this process since it is a small industry where there are few drugs labelled for sheep use and many small producers entering and leaving the industry. Human health concerns and animals welfare concerns are starting to impact the sheep industry. Zoonotic diseases are becoming more of an issue with world issues such as BSE in cattle and its possible connection to human health. Specific production limiting infectious diseases continue to impact the sheep industry with no effective methods of control or eradication, specifically abortion due to Chlamydia psittaci and wasting due to Johne's disease. Mineral imbalances are responsible for limitation of productivity. It has been found that a high percentage of cull ewes and market lambs in Ontario have been exposed to high levels of copper. There is also evidence of widespread selenium deficiency, despite routine use of vitamin E selenium injections.

Research inventory/current activities:
Gamma interferon assay for diagnosis of Caseous Lymphadenitis
Maedi Visna flock certification programs: economic analysis of costs and returns
Animal identification systems

Gaps/barriers/deficiencies/opportunities:
Basic methodology is going to have to be put in place to ensure that all sheep products are safe and that any problems can be identified and resolved. Veterinarians and producers are forced to use common therapeutic agents in an extra-label manner because drug companies are not willing to spend funds or time on seeking label claims for minor species. This leads to an increased risk of inappropriate use of drugs and meat or milk residues due to lack of information and guidance on their use. Many of these commonly

used drugs have been extensively evaluated in other countries but there is no simple manner for veterinarians to quickly access this information in day-to-day practice.
Trace backs of diseased animals, in particular those carrying zoonotic disease has been hampered by poor to non-existent monitoring systems for sheep almost no research into the control of zoonotic disease in this species, in particular coxiellosis (Q fever).

More information is needed on sheep diseases and control and eradication methods from a zoonosis point of view as well as from a flock health and production point of view. Many producers in the first few years of sheep production encounter significant problems with disease since there are few good tests for detection of disease and therefore little work can be done on eradication.

Issue #4 Environmental Issues- manure and deadstock

What is the issue:
Legislation will have a big impact on general farming practices in the next five years. Many different environmental issues will need to be investigated as society becomes more sensitive to environmental issues.

Research inventory/current activities:
Composting of sheep carcasses

Gaps/barriers/deficiencies/opportunities:
Livestock producers need research performed so that the impact of livestock agriculture on the environment can be based on scientifically derived information. Sheep producers in particular need specific methodology and information so that manure and deadstock are handled in the most environmentally friendly manner. Manure needs to be analyzed to determine appropriate application rates and whether changes such as nutrition will alter the manure nutrient content to make it more environmentally friendly. Deadstock disposal is an issue because of diseases like scrapie, as well as risk to water sheds and control of canine predators. Methodology for deadstock disposal is needed that will protect the environment and ensure that disease is not spread.

Issue #5 Emerging Dairy Industry

What is the issue:
The sheep dairy industry is very small but is expanding rapidly. The dairy industry likely will increase dramatically in size over the next few years. As an emerging industry, there is very little production information available to producers. The sheep dairy industry will face extra challenges with food safety, environmental and health issues.

Research inventory/current activities:
Development of a computer model of nutrient use in prolific, heavy milking ewes.
Ewebyte (on farm computer program) has been modified to collect basic data for milk sheep.
Investigation of sheep milk quality study

Gaps/barriers/deficiencies/opportunities:
There is a huge opportunity to supply sheep milk for cheese making. Recently, there was an inquiry about purchasing over 100,000 tonnes of Asiago Romano sheep cheese per year. Tariffs have increased and wholesalers are looking to the domestic market for a supply of sheep cheese. The industry is still so small that basic technical knowledge and established markets and marketing are barriers to producers trying to enter the industry. In order to start establishing standard marketing, benchmark milk quality and composition information is needed on sheep milk. An economical way for producers to measure sheep milk quality is needed to ensure that the pricing system between processors and producers is fair. Information is also needed on the transmission of zoonotic sheep diseases through the sheep milk and in sheep milk cheese to establish guidelines and practices for sheep milk food safety.

Services Discussion

Services available to the sheep industry are limited. The services that are currently available are: Lab diagnostics, pregnancy scanning, muscle and fat depth measurement, veterinary advice, abattoirs, nutritional advice and genetic evaluations. Some of these services are very minimal or localized in nature.

Threats
There are a number of threats to the current service.

Changes to the deadstock pickup and disposal service have resulted in adult sheep and lamb offal as well as sheep heads not being eligible for pickup. As a result, some smaller abattoirs are refusing to process sheep and lambs. This will impact the local industry, as producers must travel further to locate abattoirs that will accept sheep and lambs. The extensive freezer trade is most threatened by this change and will possibly eliminate this market completely in some areas of the province.

There is an aging and diminishing shearing work force. This is resulting in an increase in cost of the service at a time when wool prices are depressed and likely to remain so.

Access to animal health diagnostics is decreasing as cost for the service increases and sheep can no longer be submitted on a outbreak basis but must be submitted on an individual animal basis. This is particularly cost prohibitive where a number of submissions must be seen before a diagnosis can be made. As larger flocks develop, this is detrimental to the development of flock health programs. Fewer producers will utilize the lab services where the problem may not be diagnosed with a single submission. This will reduce early diagnosis and reduce the number of diagnostic results available for surveillance.

Disease surveillance does not currently include sheep. Scrapie may become one of the largest threats to meat export. This threat could impact the sheep industry and it may become a large threat to the meat export of all commodities.

Lack of qualified predator removal agents. There is limited expertise and access to removal techniques available in Ontario. As the Ontario flock increases in size it is difficult to locate a qualified predator removal agent to deal with the industry's serious ongoing predator issues.

Increased and changing legislation. As a small industry, the sheep industry has limited resources to implement change. There is also the threat of cost downloading which comes with the increased legislation.

Weaknesses

One of the biggest weaknesses of the sheep industry is that its producer organizations are under financed. Producers are spread across the province geographically and the cost of communications and infrastructure for the organizations are large compared to the size of the industry. There is also a very diverse producer profile with many different production systems, marketing goals and products being produced across the industry. This lack of funding and diverse nature of the sheep industry makes it difficult for the producer organizations to take a strong role in providing education and information to potential service providers as well as causing difficulties in representing producers.

There are also weaknesses in the current services being provided to the sheep industry. Skilled labour is not available for the sheep industry, many veterinarians have little to no experience and knowledge of sheep, many feed salespersons have little knowledge of sheep nutrition and very few of the market lambs sold are graded.

Strengths

The industry is in a better position that it has been in the past because the sheep population is increasing and prices are remaining strong. The provincial government has provided good support to the industry to assist the industry in overcoming some of the hurdles in moving to a commercial industry. The sheep research program is providing good applied research information that has started the foundation of information needed to keep commercial producers in the industry. In the past many producers joined the industry due to the positive potential apparent in the industry and then left the industry a few short years later due to frustrations with the lack of information and services necessary to do a good job. The new research information has started to fill in some of the gaps in knowledge necessary to keep producers in the industry.

The industry is also in a good position for expansion because of the availability of the Sheep Flock Improvement Program (SFIP). This program provides the tools needed by producers to improve the genetics of the flock and make change to the product as consumers change their demands. As the industry increases in size, this will become more important as lamb has to compete with other red meats.

Opportunities

If optimistic assumptions are made, the opportunities for service in the sheep industry look great! The sheep industry is a relatively environmentally friendly livestock industry. The continuing increase in the size of the industry is starting to come to the attention of some of the service providers like the feed industry and veterinarians creating interest in

improving the service to the industry. As the industry increases in size there will be more interest and it will be more economically viable for service providers to become knowledgeable about the sheep industry and to provide service.

In order to realize the above situation where more service becomes available to the sheep industry, the services, information and resources currently available to the industry must be maintained. The sheep industry will also need to continue to expand significantly to create and maintain this kind of momentum. At the current time many of the few services and resources currently available are under some threat, which makes it difficult to see how service can possibly improve for the sheep industry.

Service Recommendations

Service Recommendation #1

That there continue to be sheep research done at the University of Guelph

Background

Ontario has unique production systems and a wide variety of markets that are very different from those in large sheep producing countries.

Service Recommendation #2

That sheep health consultation and other current extension resources continue to be available from OMAFRA

Background

OMAFRA's extension resources have provided information necessary to the industry in this time of growth and change. There are no service or other consultation resources that could be utilized by the sheep industry if the current extension resources are lost.

Service Recommendation #3

That the Sheep Flock Improvement Program continue to be available to producers from OMAFRA

Background

A genetic evaluation program is the cornerstone that an industry requires to be able to generate products that will meet consumer demands. In order to become competitive with other meats it is necessary to have the tools necessary to make genetic change. As the industry starts to grow it becomes more important that these tools remain available.

Service Recommendation #4

That sheep be added to the current disease surveillance work done by OMAFRA

Background

Sheep are not currently included in disease surveillance. Scrapie may become one of the largest threats to Canadian meat exports. Scrapie is a reportable disease but little is known about the actual prevalence in Ontario sheep flocks.

Service Recommendation #5

That pricing for animal health diagnostics be revisited for sheep to consider pricing for outbreaks as well as individual animals

Background

The change to pricing for individual samples submitted rather than a price per case will have a detrimental effect on the number of animals submitted. In cases where it takes several samples to get a positive diagnosis, producers will be more likely to guess at the problem rather than confirming the problem. This will also adversely affect any disease surveillance that can be done through the laboratory results.

Research and Service Subcommittee – Research Recommendations (2001)
(optional submission)

Aquaculture

Aquaculture Research Priorities and Recommendations

Recommendation # 1

Issues Addressed: Environmental Issues, Profitability, Regulatory Framework

Target Agencies: Ontario Ministry of the Environment, Ontario Ministry of Natural Resources, Environment Canada, Fisheries and Oceans Canada, Ontario Ministry of Agriculture, Food and Rural Affairs, University of Guelph

Recommendation: Increase activity in environmental impact research.

Details: Investigate various approaches to quantify environmental impacts of fish farming activities specifically to develop techniques to estimate the impacts on assimilative capacity of various receiving water systems. Assimilative capacity assessments should take into account expected regenerative capabilities of sites, where applicable, using data from actual investigations of decommissioned facilities.

Background: In Ontario, current guidelines governing water quality impacts from aquaculture operations do not address mass loading of nutrients discharged from a production facility in relation to the assimilative capacity of receiving waters. Given the variability existing both in types of production facilities (inland, cage, recirculation) and their receiving waters (cold, warm, streams, lakes), use of the mass nutrient loading approach to regulate fish farming appears to be the optimal method for protection of the environment while allowing for orderly development of aquaculture. For inland operations, such an approach would end the discrimination currently inherent in the regulation of point source nutrient inputs on watersheds, while much greater non-point source inputs are overlooked. For cage farms, regulation through nutrient loading would offer operational flexibility and the opportunity to progress towards a management model involving site rotation, which would benefit both the environment and production. The need to move forward with an improved regulatory approach is especially urgent for the cage sector, the segment of the industry with the most growth potential. Governments must, however, recognize that the cost of developing such a regulatory approach is well beyond the resources of the industry at its present size. The decision to undertake the necessary research involved would require an acknowledgement by all government agencies that the development of a successful aquaculture sector is desirable and beneficial for Ontario.

Recommendation # 2

Issues Addressed: Profitability, Environmental Issues, Competitiveness

Target Agencies: Ontario Ministry of Agriculture, Food and Rural Affairs, University of Guelph, Ontario Ministry of Natural Resources

Recommendation: Increase activity in nutrition and bioenergetics research.

Details: Investigate alternative protein sources for salmonid feeds to reduce dependency on expensive fish and soybean meals. Simultaneously, waste production implications of alternate protein sources must be taken into account, considering the potential to decrease phosphorus and nitrogen outputs while avoiding the creation of new problems.

Background: Feed costs in aquaculture constitute up to 60 % of the unit cost of production for raising carnivorous fishes of the salmonid family. Therefore this is the variable that holds the most promise for significantly improving profitability of large, commercial scale rainbow trout farms in Ontario. Lower feed costs per unit of production would raise the relative significance of transportation costs, thus providing a competitive advantage over imports. Additionally, diet reformulation provides an opportunity to reduce nutrient outputs and alleviate environmental concerns.

Recommendation # 3

Issues Addressed: Profitability, Competitiveness, Public Perception

Target Agencies: Ontario Ministry of Agriculture, Food and Rural Affairs, University of Guelph, Fisheries and Oceans Canada, Environment Canada, National Research Council Canada, Ontario Ministry of Natural Resources

Recommendation: Increase activity in health management and disease research

Details: Determine the pathobiology and effective management of diseases which are of economic significance to fish farming in Ontario, including newly emerging diseases in species which may become commercially important to the industry, as well as the common gill and skin diseases of salmonids. Investigate the efficacy of commonly utilized chemo-therapeutants, the biological dynamics of these compounds in the environment, and their persistence and clearing rates from fish when used prior to harvest. Determine whether alternatives to chemo-therapeutant treatment, such as vaccines and modifications in husbandry practices, may represent more effective means of disease control. Develop new detection and epidemiological techniques for on farm use.

Background: More effective control and detection of economically significant diseases is essential to lowering costs of production. Public awareness of the use of antibiotics and other therapeutants in livestock production is increasing and fish farmers need to

demonstrate the safety of their disease management practices to end consumers. The lack of registered therapeutants is a problem for the industry that may not be readily overcome due to the small market potential that aquaculture presently offers for a therapeutant relative to the large expense involved in obtaining registration approvals. This necessitates the exploration of alternate means of disease treatment and prevention.

Recommendation # 4

Issues Addressed: Competitiveness, Public Perception

Target Agencies: Ontario Ministry of Agriculture, Food and Rural Affairs, University of Guelph, Fisheries and Oceans Canada

Recommendation: Increase activity in food products and processing technology research

Details: Develop and refine advanced processing and packaging techniques to add value, assure food safety and quality, and extend shelf life in order to increase the marketability of trout products. Utilize consumer testing and sensory evaluation studies to improve our understanding of consumer preferences.

Background: Ontario aquaculture does not offer the variety or refinement of retail products that other red and white meat industries have. Final product forms have been dictated as much by processing machinery availability as by consumer or market preferences. As the industry grows, product diversification will be required to appeal to a broader consumer base.

Recommendation # 5

Issues Addressed: Public Perception

Target Agencies: University of Guelph, Ontario Ministry of Natural Resources, Ontario Ministry of Agriculture, Food and Rural Affairs

Recommendation: Increase activity in improving welfare of farmed fish

Details: Develop objective methods for assessing the general welfare of farmed fish through quantitative evaluation of their physiological responses to various management practices. Establish husbandry protocols that maximize the health and welfare of farmed fish without sacrificing production performance or profitability for the farm operation.

Background: Objective methods of measuring animal response are needed for evaluation of the effect that current and alternative husbandry practices have on behaviour and stress in aquatic animals. This information will allow fish farmers to develop and adopt optimum culture practices and respond effectively to ethical concerns regarding the holding and husbandry of fish.

Ongoing Priorities

The Aquaculture Research and Services Coordinating Committee would like to emphasize the importance of maintaining currently ongoing activity in the following areas:

Genetics, Breeding, And Reproductive Control Research

Very little is known about the genetic make-up and potential for improvement of performance of the rainbow trout stocks cultured in Ontario, and we are therefore not fully exploiting the genetic potential of our domestic stocks of fish. We need to determine genetic variability, specific parameters, and gene-environment interactions affecting growth performance and disease resistance in rainbow trout, with the aim of improving those stocks. We need to enhance reproductive cycle control and reproductive performance, and work on gene mapping of desirable production traits in existing rainbow trout, Arctic charr, and other salmonid stocks.

Nutrition And Bioenergetics Research

Research to reduce the present cost of feeding salmonids through diet optimization, improved feed processing techniques, and feeding strategies must continue, as well as the development of production diets and feeding regimes for alternate species with commercial potential in Ontario.

Economic Analyses, Industry Profile And Marketing Research

The collection of the "Aquastats" database is vital for production management and forecasting of Ontario aquaculture. Successful extension work includes ongoing identification of those management factors that contribute to farm profitability and evaluation of the best methods for enhancing them.

Dairy

Research Recommendations

The ARIO reviewed the proposed University of Guelph dairy research program for 2001-2005. Most recommendations were well received. Concern was expressed that "environmental issues related to the dairy industry are not receiving the necessary emphasis".

The ODRSC discussed this concern at length in an effort to identify additional potential areas for research activity through the University. Areas discussed included: long term impact on "soil"

sustainability of current and future impacts of nutrient management plans
sentinel herds currently used in other projects could be used
evaluation of older manure lagoons
feeding strategies to minimize environmental impacts
composting on-farm and its impact on pathogen load
methane production and electrical generation on a smaller scale
deadstock disposal by anaerobic digestion
concerns of odours, pathogens and/ or nutrients

After further discussion ODRSC recommends additional "environmental" research in the following priority:

Pathogens
Nutrients
Odours
Milk house wastes
Manure management

New research is also encouraged to help set agricultural policies in the future, that are based on known facts not perception. It was felt that some of the current regulations being considered are not based on known facts.

Equine

Equine Research Priorities and Recommendations

As can be formulated from the Executive Summary and State of the Industry, it is clear that the major concerns are those of production and keeping horses in work or competition longer and healthier. These can be further broken down into areas causing poor production, whether infertility, nutritional and metabolic problems, or environmental and infectious entities. Poor performance and wastage of animals within the industry, along with demand for competitive stock brings a concern for humane methods of keeping these animals competing longer and healthier.

Since the previous set of priorities dealt primarily with system medicine and related problems (i.e. respiratory system, gastrointestinal function), the committee felt they didn't address the industry's concerns in an adequate fashion. Many of the problems facing producing suitable stock, keeping animals performing or their loss, many involve many different systems. Simultaneously areas of concern may not have been able to be funded as a result of them not fulfilling priority requirements.

Although at first glance these new priorities seem broad, after review it will be obvious that they address the industry's major concern of producing suitable bloodstock and keeping them healthy and in production, while still using our research resources to the maximum and allowing all areas of the University of Guelph access to funding for successful projects.

As can be seen, equine welfare is a stand-alone priority. Although this issue was highlighted, the committee felt that this is an area that has always been a concern and the horse industry could come under great scrutiny in the future. Although this issue is our lowest priority, it is the committee's feeling that it should be on the list so suitable projects might be funded to show a proactive commitment by the industry.

As mentioned, the new memorandum between the Equine Research Centre and the University of Guelph brings a fresh breeze to the Equine Research Program. With new growth in the industry, a new opportunity opens for OMAFRA and the University of Guelph to capitalize on the thirst of the industry for knowledge and to develop research and performance priorities which would greatly service this industry and best meet it's demands to sustain it's growth.

The research recommendations are listed below in descending order of priority.

Research Priorities and Goals

1) Poor performance horses and related wastage of adults and juvenile animals.
   Goal 1.1: To investigate traumatic injuries to joints and long bone fractures with emphasis on prevention and repair.
   Goal 1.2: To investigate the normal mechanical structure and function of the equine hoof as a basis for understanding the etiology of common lameness.

Goal 1.3: To investigate cardiovascular, respiratory and muscle function, and the regulation of fluids and electrolytes.
Goal 1.4: To investigate the history of poor performance using raceline analysis.
Goal 1.5: To investigate the pathology of inflammation and surfactant alterations in mature horses and foals and their role in allergic small airway disease (including exercise-induced pulmonary haemorrhage).
Goal 1.6: To investigate the role of surfactant alterations in foal pneumonia.

2) Development and validation of new diagnostic treatment and prevention avenues, as well as addressing emerging issues.
Goal 2.1: To develop diagnostic methods and therapeutics necessary for the characterization, alleviation and prevention of respiratory disorders.
Goal 2.2: To evaluate mechanical ventilatory strategies in combination with exogenous surfactant therapy in foals with respiratory distress.
Goal 2.3: To investigate methods of reducing the risk and complications of equine sedation, analgesia and anaesthesia.
Goal 2.4: To investigate methods based on heart-rate variability and ultrasound for assessment of normal cardiac function and diagnosis of disease and to investigate novel methods for the treatment of rhythm disturbances in the horse.
Goal 2.5: To examine novel imaging technology such as 3D ultrasound and scintigraphy, for diagnostic use in horses.
Goal 2.6: To investigate novel treatment and preventive options for equine gastrointestinal disease.
Goal 2.7: To develop new surgical techniques to reduce the post surgical recovery time and the morbidity/mortality associated with surgery.
Goal 2.8: To study the effect of air quality (moulds, dust, ammonia) on the pathogenesis of respiratory disorders, and to assess management practices involving air quality.
Goal 2.9: To develop rapid, non-invasive bioelectrical impedance analysis (BIA) technology so that it can be used to accurately assess hydration status and body composition.

3) Neonatal and adolescent wastage through infectious disease, developmental and production problems.
Goal 3.1: To investigate the pathogenesis, treatment, and control of viral and bacterial infections.
Goal 3.2: To investigate the etiology, prevention and therapy of gastrointestinal problems, including parasite control.
Goal 3.3: To investigate musculoskeletal abnormalities with emphasis on prevention early diagnosis, repair and rehabilitation.

4) Improving reproduction efficiency.
Goal 4.1: To study gamete (ovum and sperm) physiology and the mechanism of pregnancy establishment and maintenance to promote increased fertility in horses.

Goal 4.2: To study the mechanisms of pregnancy establishment and maintenance in the mare.

5) Equine nutrition as it affects performance and growth.
Goal 5.1: To investigate the nutrient composition of common feeds and the influence of certain nutrients and vitamins on growth, development and racing performance.
Goal 5.2: To investigate the effects of oral electrolyte supplements, for both beneficial and detrimental effects, with respect to the optimization of hydration status and performance.

6) Equine welfare.

Fur-Bearing

Fur-Bearing Research Priorities and Recommendations

Research Recommendations (#3, #4, #6 & #7 unchanged from 2000). *Changes to recommendations #1, #2 and #5 are underlined and in italics.*

1. To recognize the fur farming industry under the Animal Program of the UofG/OMAFRA contract thus enabling access to research faculty, facilities *(at special rates)* and funding for publicly, privately and/or jointly funded research initiatives.
2. Reque st the *New Directions in AgriFood and Rural Research Program* be extended for *2002/2003* and that eligibility criteria continue to include fur farm species.
3. Expa nd research activities to develop control methods for Corona Virus in mink
4. Expa nd nutrition research to reduce feed costs by improving feed efficiency and feed conversion through the use of feed additives and opportunity feeds.
5. Initiate research to evaluate the fur farm industry's environmental, economic and social contributions to rural Ontario. The key change to this recommendation was the need *to develop short-term and long-term environmentally sound solutions for disposing of carcasses and fat from the pelting process and other by-products such as manure and bedding materials.*
6. Initiate research to assess Aleutian Disease prevalence in Ontario and its impact on production related and economic losses.
7. Initiate research to investigate the causes of fur chewing in chinchillas.

Responses From 2000 Report

Research Recommendation #1 (2000) - To recognize the fur farming industry under the Animal Program of the UofG/OMAFRA contract thus enabling access to research faculty, facilities and funding for publicly, privately and/or jointly funded research initiatives.

Issue: Lack of recognition of the fur farming industry and subsequent access to research faculty, facilities and funding within UofG/OMAFRA Contract.

Target Agencies: ARIO, University of Guelph – Animal Program, OMAFRA

Responses: The OASCC executive considered the recommendation from OARSC about combining the Special Research Fund with the Animal Program funding allocation to facilitate research in alternative and minor animal species. This recommendation was not accepted, however the University and OMAFRA indicated a willingness to work towards developing solutions to facilitate fully-funded research in these areas to be conducted at the University of Guelph.

Research Recommendation #2 (2000) - Request the Special Research Fund be extended for 2001 and that eligibility criteria continue to include fur farm species.

Issue: Status of OMAFRA Special Research Fund for 2001

Target Agencies: OMAFRA & University of Guelph – Animal Program

Responses: The 2000/2001 Special Research Fund was extended for 2001 & the fur farm sector was eligible for funding. The Special Research Fund approving funding for the "Investigation of Epizootic Catarral Gastroenteritis (ECG) of farmed mink".

Research Recommendation #3 (2000) - Expand research activities to develop control methods for Corona Virus in mink.

Issue: Corona virus is an infectious disease causing significant production and economic losses to most Ontario and Canadian mink farms. There is currently no specific treatment or method of prevention.

Target Agencies: Ontario Veterinary College, Animal Program – University of Guelph

Responses: The Special Research Fund approving funding for the "Investigation of Epizootic Catarral Gastroenteritis (ECG) of farmed mink".

Research Recommendation #4 (2000) - Expand nutrition research to reduce feed costs by improving feed efficiency and feed conversion through the use of feed additives and opportunity feeds.

Issue: Need for increased nutrition related research to improve production and economic efficiencies of the fur farm sector.

Target Agencies: Animal Program – University of Guelph and Nova Scotia Agricultural College

RESPONSES: NO ACTION

Research Recommendation #5 (2000) - Initiate research to evaluate the fur farm industry's environmental, economic and social contributions to rural Ontario.

Issue: Need for an assessment of the environmental, economic and social contributions of the Ontario fur farm sector.

Oascc Linkages: Ontario Agricultural Economics Research and Service Committee & Ontario Agriculture and Food Engineering Research and Service Committee (including Livestock & Rural Environment Subcommittees)

Target Agencies: University of Guelph

RESPONSES: NO ACTION

Research Recommendation #6 (2000) - Initiate research to assess Aleutian Disease prevalence in Ontario and its impact on production related and economic losses.

Issue: There is currently no data on the prevalence, production related losses and ultimately the economic impact of AD on mink production in Ontario.

Target Agencies: Ontario Veterinary College, Animal Program - University of Guelph

RESPONSES: NO ACTION

Research Recommendation #7 (2000) - Initiate research to investigate the causes of fur chewing in chinchillas.

Issue: Pelt damage caused by chewing results in substantial economic losses.

Target Agencies: University of Guelph, Ralston Purina Canada Inc, and National Chinchilla Breeders of Canada

RESPONSES: NO ACTION

Goat

Goat Research Priorities and Recommendations

Recommendations 1 (health) and 5 (reproduction) continue to remain as the major research priorities for the goat industry.

***Recommendation # 1* – HEALTH**
Issues: Management of Abortion Agents, Evironmental – Manure & Deadstock Disposal
OASCC Linkages:
***Target Agency**: University of Guelph, AAFC, OMAFRA*
***Title**:* Health
***Details**:*
1.De termine the impact of the major production limiting diseases, and develop economic methods for their control and eradication.
2.Inve stigate the causes, control and prevention of neonatal diseases in kids.
3.Eva luate the results of research into common pathogens elsewhere in the world, and if applicable, apply the findings to the control of these diseases in the province.
4.Inve stigate the prevalence of zoonotic diseases and their significance to the public's health in the province.
5.Eva luate methods to manage pathogen levels in manure & deadstock compost material.
6.Inve stigate the development of computer systems to assist producers in their herd health and production management systems.

Background: As the goat industry continues to develop, health management needs to move from the identification of the simple, single pathogen disease to the recognition of the multifactorial diseases involving one or more pathogens, the environment, nutrition and genetics. To solve these problems a multidisciplinary approach, using many techniques is needed.

***Recommendation # 2* - GENETIC IMPROVEMENT**
***Issues**:* Affordably Priced Genetic Improvement
OASCC Linkages:
***Target Agency**: AAFC, OMAFRA*
***Title**:* Genetic improvement
***Details**:*
1.Eva luate how existing performance programs for Dairy milk performance test can be modified to allow genetic improvements to continue, but at a price level that will allow most commercial producers can participate
2.To dev elop genetic improvement programmes to measure in herd and across breed improvements for meat goat production
3.To c ompare the performance and productivity of the present breeds in Ontario.
4.To de velop Expected Progeny Differences (EPD's) for economically important traits.

Background: The introduction of the Boer goat has stimulated interest in the production

potential of these and the native breeds under Ontario conditions. In the past there has been very little work in this area. As a start, the computer infrastructure of the Sheep Flock Improvement Programme can easily be adapted by adding goat breeds to the current sheep programme, so that data can be collected to develop goat adjustment factors.

Milk recording programs in other countries have offered variations of testing frequency to encourage as many producers as possible to continue to participate. These need to be evaluated as to applicability to Canadian/ Ontario needs.

Recommendation # 3 **- NUTRITIONAL STANDARDS FOR ONTARIO GOATS**
Issues: Nutrition to produce milk economically
OASCC Linkages:
Target Agency: *University of Guelph, OMAFRA*
Title:
Details:
1.To de velop a nutrition computer model for the growing kid and the breeding doe raised under Ontario conditions and production systems.
2.Eva luate different feeding programs for optimum levels of milk production
3.Eva luate effect of different feeding programs on milk components, particularly, fat, protein, and other solids.

Background: Much of the data used to formulate goat rations have been derived from work in climates, environments and production systems very dissimilar to Ontario. The development of this model would give producers and feed industry the necessary information and tools to improve feeding management appropriate to this province. The end result being improved production (both meat and milk) and carcass quality. Evaluating effect of different feeding programs on milk production, and cost of production will enable producers to maintain or improve profit levels while increasing total production.

Recommendation # 4 **- PRODUCT DEVELOPMENT & PRODUCT QUALITY**
Issues: Nutrition to produce milk economically,
OASCC Linkages:
Target Agency: *University of Guelph, OMAFRA*
Title: Product Development & Product Quality, Affordably priced genetic improvement programs
Details:
1.To investiga te genetic and management factors that can affect the consumer quality of milk and meat.
2.To e valuate the genetic components of economically important carcass traits and their value to the producer.

Background:. Various factors affect the quality of milk. Some of those believed to affect goat milk quality are very different from those known for cow milk. These need to be investigated and understood so producers can deliver the quality of milk needed for

continued growth and expansion of current markets for cheese and fluid milk.

***Recommendation # 5* - REPRODUCTION**
Issues: Affordably priced genetic improvement programs, Benchmarks for economics of production
OASCC Linkages:
Target Agency: *University of Guelph, AAFC, OMAFRA*
Title: Reproduction
Details:

1. Apply new reproductive technologies to goat breeding, including embryo transfer technologies, improved semen handling and storage, and the hormonal manipulation of the estrus cycle.
2. Investigate the causes of reduced reproduction performance at both the individual and herd level, the control of abortion and other failures.
3. Investigate the use of MGA (melengesterol acetate) as an economic alternative in out-of-season breeding programs, and synchronization in meat and dairy goat herds.

Background: The causes of poor reproduction in the goat herd often go unrecognized and unresolved, but can markedly reducing productivity. The effective application of modern reproductive techniques can only succeed if there is, initially, good reproductive performance in the herd. By the use of modern reproductive technology the herd can be managed more efficiently labourwise, allowing more goats to be handled by the same labour force.

***Recommendation # 6* - MANAGEMENT**
Issues: Benchmarks for economics of production, Management of Abortion Agents, Environmental Issues – manure & deadstock
OASCC Linkages:
Target Agency: *University of Guelph, OMAFRA*
Title:
Details

1.To inve stigate management systems that will provide optimum production for the different segments of the Ontario herd.
2.Eva luate the output and economics of different production systems (e.g. intensive housing v. pasture grazing, accelerated v. once a year kidding etc.)
3.Eva luate different housing and management systems through all seasons for the raising of kids.

Background: Because of Ontario's wide climatic variations, established management systems need to be modified to provide the optimum for production. The systems are there, all that is needed is to adapt them to suit this province. The correct management system for a particular operation will not only increase production, but also enhance animal welfare. To continue to make improvements in productivity, producers need benchmarks to measure their enterprise performance against.

Summary of Distribution of Recommendations

Recommendation	*U of Guelph*	OGBA	*CGS*	*AAFC & CFIA*	*OMAFRA*
RESEARCH					
Nutrition	X	X	X		X
Health	X	X	X	X	X
Genetic Improvement	X	X	X	X	X
Reproduction	X	X	X	X	X
Product Development & Product Quality	X	X	X		X
Management	X	X	X		X

Report of Action Taken Since Last Strategic Report

All recommendations were distributed according to the summary in the 1999 report. The responses received are as follows:

Recommendation #2 : Genetic Improvement *Priority 1A sent to AAFC, OMAFRA*

Background

The introduction of the Boer goat has stimulated interest in the production potential of these and the native breeds under Ontario conditions. In the past there has been very little work in this area. As a start, the computer infrastructure of the Sheep Flock Improvement Programme can easily be adapted by adding goat breeds to the current sheep programme, so that data can be collected to develop goat adjustment factors.

Detailed Objectives

1. To develop genetic improvement programmes to measure in herd and across breed improvements
2. To compare the performance and productivity of the present breeds in Ontario.
3. To develop Expected Progeny Differences (EPD's) for economically important traits.

RESPONSE from AAFC

The Research Branch scientist located at the University of Guelph could participate with the staff at the CGIL in adapting some of the sheep improvement programs for the goat

meat sector. Across breed comparisons (EPD's) would resolve the request for evaluating the performances of the different breeds that presently exist.

Recommendation # 5: Reproduction ***Priority 1A***
sent to AAFC, ARIO & University of Guelph

Background

The causes of poor reproduction in the goat herd often go unrecognized and unresolved, but can markedly reducing productivity. The effective application of modern reproductive techniques can only succeed if there is, initially, good reproductive performance in the herd. By the use of modern reproductive technology the herd can be managed more efficiently labourwise, allowing more goats to be handled by the same labour force.

Detailed Objectives & Responses From AAFC

1. Apply new reproductive technologies to goat breeding, including embryo transfer technologies, improved semen handling and storage, and the hormonal manipulation of the estrus cycle.

AAFC devotes limited resources to do research on sheep and goat. The results it is obtaining on the development of reproductive technologies in sheep and cattle could be helpful in setting up a program to answer some of the queries from the goat sector.

2. Investigate the causes of reduced reproduction performance at both the individual and herd level, the control of abortion and other failures.

This is field investigative research that could be conducted by extension personnel with the help from a research with epidemiological training.

3. Investigate the use of MGA (melengesterol acetate) as an economic alternative in out-of-season breeding programs, and synchronization in meat and dairy goat herds.

MGA is presently being investigated in sheep for the purpose of out of season breeding. AAFC would share the information with those who would put forward a program to investigate the suitability of MGA for goats.

Pork

Pork Research Priorities and Recommendations

The committee noted that OMAFRA provides research as a "service" to the agricultural industry. The partnership with the University of Guelph creates an infrastructure that allows research to be done for private industry and commodity groups which otherwise might not be done. In many cases, it leverages the effectiveness of private company or commodity group research funds.

There needs to remain in place a broad, flexible research program in order to balance the need for long-term research objectives and the need to respond to emerging issues.

It was noted that the recommendations in last year's Strategic Report were generally being addressed, with one exception.

Goal 1.4 states:

"To evaluate the safety of pigs and people. Specifically there is a need to investigate techniques to reduce the health risks associated with manure gases such as hydrogen sulfide particularly at the time of manure removal. Health concerns such as the long-term inhalation of barn dust by farm workers needs to be investigated."

There is a need for research regarding working conditions for employees in agricultural operations, in order to ensure that we can protect their health and well-being. Farm workers are major contributors to the success of the industry. Rural residents are also beginning to show concern about the health implications of living near large agricultural operations. There is a clear need for leadership in research to assess risks and, eventually, to establish acceptable standards. Agriculture is currently exempt from the Occupational Health and Safety Act, but as farms become larger and employ more people, there may be pressure to make the industry comply. Application of standards from other industries to agricultural operations may not be sensible, but this could happen if standards specific to agriculture are not available. It was noted that human health and safety includes mental health and coping with stress.

The recommendations and priorities outlined in our Strategic Report submitted last year remain our recommendations and priorities for 2001.

Sheep

Sheep Research Priorities and Recommendations

Recommendation #1 Coordination of Research under OLIBS

Issue: Declining and Non-existent Infrastructure
OASCC Linkages:
Target Agency: University of Guelph, OSMA, CSF, CC, OMAFRA
Title: Coordination of Research under OLIBS
Details

1.Continue a similar structure where all of the sheep research is aimed toward a common goal and meet the objectives of a common strategy.
2.To m ove research out on to farm
3.Support re search that will solve the problems associated with moving from a small flock to a large flock.
4.Support re search that will ensure the economic viability of sheep enterprises.
5.Support re search that will encourage a year round supply of quality lamb.

Background

For the past four years, the sheep research program has been coordinated through the Ontario Lamb Improvement Breeding Strategy (OLIBS) to direct research towards providing the tools necessary for the industry to expand and supply more of the existing marketplace. Research has been started in the areas of: genetics, reproduction, health, nutrition, management and economics and meat production and evaluation. Cooperation between the industry and the research community has resulted in more effective use of research dollars by generating matching funding as well as focusing research on industry needs. This targeting of research funding is starting to have an effect on the industry as the technology and research information becomes available. The sheep industry must continue to be as innovative as possible to survive and build new infrastructures as the old ones are removed.

Recommendation #2 Nutrition

Issue: Market Supply – Quantity and Quality, Environmental Issues – Manure and Deadstock, Emerging Dairy Industry
OASCC Linkages: Soil, water, air
Target Agency: University of Guelph, OSMA, CSF, AAFC & CFIA, CC, OMAFRA
Title: Nutrition
Details

1.De velop a computer model for the nutritional requirements of prolific heavy milking ewes. Study the nutritional requirements of the prolific maternal lines produced under different management systems such as annual and accelerated.
2.Com pare various pasture and forage management techniques for reducing the cost of feeding sheep.
3.Inve stigate changes in feeding to reduce potentially environmentally harmful nutrient levels in manure.

4.Inve stigate optimum protein and energy levels for highly productive transition ewes according to fetus number.
5.De velop an accurate mechanistic computer model for fast growing lambs sired by terminal sire breeds. Compare various feed production systems for feedlot lambs of terminal sires and the effect on lamb growth and carcass composition.
6.Assess the utilit y of such factors as rumen degradable protein and carbohydrates at maximizing rumen fermentative capacity. Study rumen development in lambs to maximize growth and minimize costs by determining protein requirements relative to the stage of rumen development under different management systems.
7.St udy the interaction between copper, molybdenum, sulphur, iron and zinc in sheep feeds and the effect on copper levels in the livers of sheep.
8.Com pare different ration formulations and the effect on milk composition and components.

Background

Computer modelling of results from past research offers a new tool to help to more accurately determine the nutritional requirements for highly productive sheep and fast growing market lambs. This data, beyond the inadequate recommendations provided by the 1985 NRC publications, would be of tremendous value to the sheep industry. The single greatest variable cost in sheep production is feed, therefore significant potential for reducing costs and increasing profit potential is through improvements in nutrition and feeding. As the industry changes to larger flocks with more productive ewes, who are lambing more often, appropriate protein, energy and mineral levels for different stages of gestation becomes more critical. Investigation into this area is needed to ensure that lamb mortality in the form of mummified fetuses and stillbirths are kept to a minimum.

Recommendation #3 Health

Issue: Food Safety and Health Issues, Environmental Issues – Manure and Deadstock, Emerging Dairy Industry
OASCC Linkages:
Target Agency: University of Guelph, OSMA, CSF, CC, OMAFRA
Title: Health
Details

1. Methodology needed to ensure that manure and composted deadstock is free of disease. Ability of disease to survive composting and other methods of deadstock disposal.
1. Develop an Ontario Sheep Flock Health Improvement Program that will encourage proper flock health management and drug use and will allow for accreditation of disease status of sheep flocks.
2. Use data collected from on-farm management programs to evaluate health and productivity and impact of disease and its eradication on selected farms.
3. Development and evaluation of more effective control methods for pneumonia, flystrike and coccidiosis.

4. Efficacy of treatment modalities in curing copper exposed sheep needs to be evaluated as well as assessing the prevalence of the disease and the risk factors of various forages, prepared feeds and feed preparation techniques.
5. Develop and/or assess diagnostic tests for detection of Scrapie either in postmortem tissues or the live animal. Using established surveillance techniques, monitor the prevalence of scrapie in Canadian sheep.
6. Development and evaluation of diagnostic tests for specific production limiting diseases of sheep.

Background

Considerable information on the health status of Ontario sheep has been gathered in recent years. Several diseases have been identified that have an economic impact on the health of the Ontario sheep flock. For producers to make significant advances in productivity, these diseases need to be controlled or eradicated. Some require only an improvement in standard health management practises such as vaccination and parasite control. Others require an infrastructure to assure eradication, e.g. maedi-visna infection, caseous lymphadenitis, and others. This infrastructure would involve standardized testing and regulations with the result being a flock accreditation program that would allow other producers purchasing breeding stock, to assume a flock carries a low risk of disease. In addition, it is important to educate producers and veterinarians with respect to quality assurance issues, such as extra-label use of drugs and residue avoidance.

Treatment and prevention of copper toxicity in sheep is an increasingly important issue due to more concentrate feeding of sheep and more risk of feed mill contamination or mix-ups with cattle and swine feeds. Other risk factors include forages and pastures that have been contaminated with copper containing manure. Many of the treatment modalities have not been assessed with respect to short term and long term efficacy, nor their risk to public health. Many times it is difficult to trace back the source of the exposure.

The prevalence of Scrapie is not known in Canada. Recent outbreaks of clinical Scrapie underline the fact that this disease is still an important issue in Canada both in terms of the health of the national flock and for exportation of live animals and sheep products.

The last four recommendations encompass areas that are equally important to the industry. Ranking of all of the recommendations was difficult because the details of each recommendation differ in importance at this time but will all be important over the next 5 years.

Recommendation #4 Genetic Improvement

Issue: Market Supply – Quantity and Quality, Emerging Dairy Industry
OASCC Linkages:
Target Agency: University of Guelph, OSMA, CSF, CC, OMAFRA
Title: Genetic Improvement

Details

1. Monitor the performance of OLIBS ewes and determine the most economical breeding strategy which maintains high performance.
2. Develop genetic evaluations for maternal traits.
3. Develop genetic evaluation indexes for maternal and terminal line sheep as well as an economic index that could be used for commercial ewes.
4. Develop a terminal index or evaluations that would assist producers in selecting terminal type animals that will improve the carcasses of their animals specifically for the price grid of the current forward contract project.
5. Develop genetic evaluations for dairy sheep traits such as milk yield, %fat and %protein.

Background

The sheep industry has identified the production of superior maternal trait sheep as important to improving the productivity of the Ontario sheep flock. Prior to this, most genetic selection has been based on growth variables. Producers, in order to identify and select appropriate maternal trait animals for replacement, semen collection for artificial insemination or embryo recovery, require new tools. The OLIBS study offers a framework in which to develop and evaluate these tools. Sire referencing schemes are becoming more practical with the advent of successful AI programs. As the updated genetic selection tools are developed, indexes combining traits become more important as producers struggle to determine which trait is more important and how selection of different traits will impact on performance as a whole. Rail grading in the forward contract project has resulted in industry interest in selecting for those carcass traits that will improve the rail grade of their animals.

Recommendation #5 Reproduction

Issue: Market Supply – Quantity and Quality, Emerging Dairy Industry
OASCC Linkages:
Target Agency: University of Guelph, OSMA, CSF, CC, OMAFRA
Title: Reproduction
Details

1. Develop and evaluate improvements in the practicality of embryo transfer technologies, particularly in superovulation, embryo freezing, transfer, sexing, twinning, cloning in juvenile and mature ewes.
2. To evaluate methods for relaxing the cervix to improve success of artificial insemination and embryo transfer.
3. Develop techniques to improve the survival of frozen ram semen and extend the survival of fresh ram semen.
4. Evaluation of the use of MGA for synchronization with a fresh or frozen AI program. Determination of withdrawal times for milk after synchronizing with MGA.

Background
Streamlining of techniques and improving success rates are necessary to reduce the cost per lamb born. This is important in the short term, in order to speed up the reproductive rate of genetic progress for on-farm evaluation of the OLIBS maternal trait sheep, but also in the long term for the sheep industry to allow efficient movement of genetics from flock to flock without compromising the health status of the flock. The success of gamete transfer and in vitro fertilization as well as improved artificial insemination success is an integral part of the process and its eventual commercial success.

Recommendation #6 Management and Economics

Issue: Market Supply – Quantity and Quality, Food Safety and Health Issues, Emerging Dairy Industry
OASCC Linkages: Economics
Target Agency: University of Guelph, OSMA, CSF, CC, OMAFRA
Title: Management and Economics
Details

1. Identify potential microbial, mechanical and chemical hazards which relate to lamb and sheep meat and milk products and identify potential control points and risk factors during production, transportation and the slaughter process.
2. Evaluate the economics of applying embryo transfer technologies for genetic improvement in sheep production as measured within the OLIBS study.
3. Compare the economic performance of selected maternal lines with traditional breeds under different management systems such as annual lambing and accelerated lambing.
4. Evaluate and improve the existing on-farm computer program (EweByte) for the evaluation of health, productivity and genetic record keeping, particularly within the OLIBS study.
5. Develop an economical, effective, permanent animal identification system.

Background
Technologies in reproduction, health, nutrition, genetics and meat production may be shown to improve productivity but the investment in research in these areas is only worthwhile if the improvements result in profit. A permanent animal identification program is essential for any disease control program or quality assurance program that involves slaughter house surveillance. As the sheep dairy industry continues to grow and develop it is important to research appropriate withdrawl times for milk and to establish standards for milk quality and handling.

Recommendation #7 Meat and Milk Production and Evaluation

Issue: Market Supply – Quantity and Quality, Emerging Dairy Industry
OASCC Linkages:
Target Agency: University of Guelph, OSMA, CSF, CC, OMAFRA
Title: Meat and Milk Production and Evaluation

Details

1.Eva luate the carcass characteristics of the maternal lines produced under OLIBS.
2.Eva luate changes in carcass characteristics of lambs produced by terminal sire crosses of maternal trait dams and of lambs produced from sire referencing schemes.
3.De termine the appropriate fat cover of lamb for shelf life, palatability and consumer acceptance.
4.Eva luate the effect of breed, production system and milking frequency on milk yield and components in dairy sheep.

Background

The future of the sheep industry is in the development of prolific, heavy milking sheep that can breed successfully out-of-season. However, these breeds have not been sufficiently muscled to meet the demands of the meat processor and consumer. Excellent terminal cross genetics exist in Ontario but the crosses need to be evaluated with respect to carcass characteristics. Terminal sires will continue to improve through the use of sire referencing schemes but the product lambs of such schemes need to be evaluated with respect to carcass characteristics in order to make appropriate genetic selection.

Summary of Distribution of Research Recommendations

Recommendation	***U of Guelph***	**OSMA**	***CSF***	***AAFC & CFIA***	***CC***	***OMAFRA***
RESEARCH						
Coordination of Research under OLIBS	X	X	X		X	X
Nutrition	X	X	X		X	X
Health	X	X	X	X	X	X
Genetic Improvement	X	X	X		X	X
Reproduction	X	X	X		X	X
Management & Economics	X	X	X		X	X
Meat Production & Evaluation	X	X	X		X	X

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Legend:

DFO Fisheries and Oceans Canada
OAA Ontario Aquaculture Association
OMAFRA Ont. Min of Agr. Food and Rural Affairs
OME Ontario Ministry of Environment
OMNR Ontario Ministry of Natural Resources
UG University of Guelph

Beef Subcommittee Membership

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Dr. Rob Tremblay	905-681-0194				
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Dr. Donna Hutchings	613-228-6612				
Dr. Scott McEwen	763-3117	824-4120 ext.4751	smcewan@ovc.uoguelph.ca	OVC, University of Guelph	Guelph, ON N1G 2W1
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Mr. Leo BRISSON	Dairy Farmers of Ontario	47 St.Jean Baptiste, C.P 1205 Embum, ON K0A 1W0	613-443-2372	613-443-3640	brisson@netrover.com	2001
Dr. Helene PETIT	Lennoxville Dairy & Swine Research & Development Ctr.	C.P. 90, 2000 Route Est. Lennoxville, P.Q. J1M 1Z3	819-565-9174 ext.210	819-564-5507	petitH@em.agr.ca	2002
Dr. Ann GODKIN	Ont. Ministry of Agriculture, Food and Rural Affairs	Veterniary Science 2nd Floor Wellington Place, RR #1 Fergus, ON N1M 2W3	519-846-3409	519-846-8101	ann.godkin@omafra.gov.on.ca	2003
Dr. Tim HENSHAW	Gencor (Artificial Insem. Industry)	Box 110 Minesing, ON L0L 1Y0	705-737-5919	705-737-4295	thenshaw@sympatico.ca	2002
Mr. Harold HOUSE	Ont. Ministry of Agriculture, Food and Rural Affairs	Box 159, 100 Don Street Clinton, ON N0M 1L0	519-482-1488	519-482-5031	hhouse@omafra.gov.on.ca	2002
Dr. Kerry LISSEMORE	Ont. Veterinary College	University of Guelph Guelph, ON N1G 2W1	519-824-4120 ext.4036	519-763-8621	klissemo@ovc.uoguelph.ca	2002
Mr. Dennis McKNIGHT (*)	ODRSC Chairman	Kemptville College, U of G Box 2003, Kemptville ON K0G 1J0	(613)258-8336 ext. 348	(613)258-8401	dmcknigh@kemptvillec.uoguelph.ca	2002
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Dr. Clare RENNIE	Semex Canada Inc.	130 Stone Road Guelph, ON N1G 3Z3	519-821-5060	519-821-7225	crennie@semex.com	2003
Mr. Hans VINK	Dairy Farmers of Ontario	R.R. #2 Norwood, ON K0L 2V0	705-696-2169	705-696-1427	vinkfarms@heydon.com	2001
Dr. John WALTON	Dept. of Animal & Poultry Science	University of Guelph Guelph, ON N1G 2W1	519-824-4120 ext.3706	519-767-0573	jswalton@.uoguelph.ca	2002
Mr. Bob KERR	Ont. Large Herd Operators	c\o R.R. #2 Acton, ON L7J 2L8	519-853-0138	519-853-1428	prkerr@aztec-net.com	2003
Vacant/ TBA	Ontario Grain & Feed Dealers Association					2003
Mr. John MCCALLUM	Ontario DHI	150 Research Lane, Suite 200 Guelph, ON N1G 4T2	905-939-7080	905-939-7065		2003

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Equine Subcommittee Membership

Dr. Keith Betteridge	Biomedical Science University of Guelph	Research-Reproduction	2003
Dr. John Burton	Animal & Poultry Science University of Guelph	Research – Nutrition	2003
Ken Armstrong	Equine Research Centre Guelph, Ontario	Interim Director, ERC	2004
Dr. Mike Corradini	Bradford Animal Clinic Bradford, Ontario	Ontario Equine Practitioners	2004
Dr. James Henderson	R. R. #1 Inglewood, Ontario	Industry-Pleasure & Quarter Horse, Practitioner	2000
Dr. Al Paterson		Ontario Equestrian Federation President	2005
Virginia Buchanan-Smith	Pitcaple Farm R. R. #22	Industry-Hunter , Jumper International Competitor	2004
Simon Cassidy	c/o Samson Farms Milton, Ontario	Industry – Thoroughbred Breeder, Farm Manager	2004
Dr. Wayne McDonell	OVC, University of Guelph Guelph ON NIG 2W2	Research	2001
Dr. Dan McMaster	210 Campbellville Road Campbellville, Ontario	Industry - Equine Practitioner	2003
Dr. Rolph DeGannes Vice Chair	191 Western Avenue Box 143	Equine Reproduction Specialist	2004
Marc-Andre Blouin	Ralston Purina Canada Inc 404 Main St. P.O. Box 250	Feed Industry	2004
Paula Wellwood	Wellwood Stables Inc Cambridge, Ontario	Canadian Standardbred Horse Society, Broodmare	2004
Melissa Todd	Industry - Bright, Ontario	Hunter/Jumper	2001
Dr. Laurent Viel	Department of Clinical Studies University of Guelph	Co-ordinator, Equine Program, Respiratory Specialist	2004
Dr. Robert Wright	OMAFRA Veterinary Science Wellington Place	Extension OMAFRA	2000

Fur Bearing Subcommittee Membership

Name	Points of Contact	Organization Represented	Term
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Greg Fries	Mailing address, etc. not provided at request of member.	Ontario Fur Breeders Association	2002
Gerald Golem	Mailing address, etc. not provided at request of member.	Chinchilla Sector	2002
Dr. Bruce Hunter	Department of Pathology, Ontario Veterinary College, University of Guelph, Guelph, Ontario N1G 2W1 (519)824-4120 ext. 4625 Fax (519)824-5930 email - bhunter@ovcnet.uoguelph.ca	University of Guelph	2002
Dr. Emilie Martin	Animal Health Laboratory Laboratory Services Division University of Guelph P. O. Box 3612 Guelph, Ontario N1H 6R8 (519) 824-4120 ext. 4523 Fax: (519) 821-8072 Email: emartin@lsd.uoguelph.ca	University of Guelph	2002
Ted Parkinson	Mailing address, etc. not provided at request of member.	Ontario Fur Breeders Association	2002
Gary Richardson	Finnie Distributing Inc., Mailing address, etc. not provided at request of member.	Feed Industry & Mink Sector	2002
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Goat Subcommittee Membership

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Anita O'Brien Committee Chair	Sheep & Goat Specialist – Production Systems Ontario Ministry of Agriculture, Food & Rural Affairs Ontario Government Building, PO Box 2004 Kemptville ON K0G 1J0 (613)258-8299 FX (613)258-8392 E-mail anita.obrien@omafra.gov.on.ca	OMAFRA	2001
Dr. Paula Menzies	Dept. of Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, N1G 2W1 Tel. 519-824-4120, Ext. 4043 Fax 519-763-8621 E-mail pmenzies@ovcnet.uoguelph.ca	U of Guelph	2002
Delma Kennedy	Sheep Specialist – Repro., Breeding & Genetic Improvement Programs Livestock Technology, O.M.A.F.R.A. 1 Stone Road West, Guelph, N1G 4Y2 Tel. 519-826-3290 Fax 519-826-3254 E-mail delma.kennedy@omafra.gov.on.ca	Genetics	2001
Bonnie Bruce	R.R. #2, Grand Valley, ON LON 1GO Tel. 519-928-5266 Email: bruceview@sympatico.ca	Ontario Goat Breeders Association (Dairy)	2004
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Turkey Subcommittee Membership

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Dr. Jim Blackman Shur- Gain Research 30 Eglinton Ave. W., suite 300 Mississauga, Ontario 905-501-3422 905-501-3436 **Feed Industry Representative**	Dr. Emily Martin Animal Health Laboratory, Guelph, Ontario **University of Guelph Representative**
Dr. Lloyd Weber LEL Farms R.R. #6 Guelph, Ontario, N1H 6J3 519-821-5963 519-821-2841 **Poultry Veterinarian Representative**	

Sheep Subcommittee Membership

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Mr. Fred Baker	OSMA, RR#3, Mountain, Ont, K1A 0T6, (613) 989-5352 FAX (613) 989-3919 Email bakefre@statcan.ca	OSMA, CSF	2000
Vacant		Veterinary Practitioners	
Mr. John Cuthbert	Canadian Co-op Woolgrowers, RR#1 Cookstown, Ont. L0L 1L0 (705) 458-4800 FX(705) 458-0186	CCWG	2000
John Steele	RR#4, Norwood, Ont, K0L 2V0, ph/fax(705) 969-1491 Email: john.steele@sympatico.ca	Producer	2002
Mr. Jim Johnston	New Liskeard AR S, Box G, New Liskeard, Ontario, P0J 1P0 (705) 647-6701 ext 26 FX (705) 647-7008	Researcher - OMAFRA	2002
Ms. Delma Kennedy, Chair	Agriculture & Rural Division, 3 N.E., OMAFRA, 1 Stone Rd., Guelph, Ont, N1G 4Y1,(519) 826-3290 FX (519) 826-3254 Email: dkennedy@omafra.gov.on.ca	SFIP - OMAFRA	2003
Cathy Lennon, Manager OSMA	OSMA, 730 Malcolm Rd, Guelph, Ont, N1K 1B1, (519) 836-0043 FX (519) 824-9101 Email: manager@ontariosheep.org	OSMA	2002
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Ted Skinner	2910 Conc 7, RR#5 Bowmanville, Ontario, L1C 3K6, (905) 263-2102 fax (905) 263-4388 email: cedarcreekfarm@sympatico.ca	Producer	2002
Mr. David Wight	RR#1, Belle Vallee, Ontario, P0J 1A0 (705) 647-8686 FX (705) 647-4765	Wool Processor	2000
John Hemstead Chair, OSMA	354 Line 8 South, RR#2 Oro Station, Ontario L0L 2E0 email: sheep@vanam.com	OSMA	2001
Laurie Murdock, Executive Director	Ontario Independent Meat Packers and Processors, 5420 Hwy 6N Suite 828, RR#5, Guelph, Ontario N1H 6J2 (519) 763-4558; 1-800-263-3797 (519) 763-4164 FAX	Meat Processors Industry	not a member